University of Alberta

An Analysis of Memorable Wildlife Encounters in Elk Island National Park

by

Ross J. Chapman ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

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Abstract

This study was initiated to improve understanding of people / wildlife encounters, particularly those described as memorable. A focused experience embraces a single attribute or combines transitions along primal or cultural strands and is simple to complex or a mixture of these. Seventeen attributes were isolated and tested to determine how they contribute to perceptions and conclusions of what constitutes a quality encounter. This study explored the range and interplay of human dimensions -- behavioral, social, environmental and knowledge. Results demonstrated that a memorable wildlife encounter is very complex. Building upon the framework of benefits-based management, biophilia hypothesis and non-consumptive wildlife-oriented recreation model, this study provides insight into visitor satisfaction and assists management at Elk Island National Park, Canada.

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Chapter 1: Literature Review and Guiding Principles

Introduction and Organization of Thesis

Now more than ever, there is a need to understand the full range of benefits derived from human interactions with the natural world. This thesis considers the human dimensions of wildlife management, specifically, what humans derive from wildlife viewing. This understanding is necessary to properly manage wildlife using an ecosystem management approach. Successfully incorporating human concerns into ecosystem management means giving equal consideration to humans as well as to physical and biological considerations.

This thesis is built upon research started three decades ago that helped public land managers identify and understand the importance of many nature-based benefits (Driver, Brown, & Peterson, 1994). While these understandings have been valuable, they have also been incomplete and researchers have yet to fully study the more elusive benefits of wildlife viewing that may stem from a possible relationship between wildlife and humans.

This thesis consists of ten chapters. Chapter 1 focuses on a literature review that forms the basis of the author's understanding of memorable wildlife encounters. For the purposes of this study a memorable wildlife encounter is defined as a direct encounter with any species of native park wildlife (fauna or vertebrate or invertebrate or flora) that stands out in the respondent's memory as a significant or important event that elicits a primal response.

Chapter 2 presents the methodological framework and describes data collection methods. Background on wildlife viewer characteristics is presented in chapter 3. Chapter 4 describes the importance of wildlife viewing to the Elk Island National Park (EINP) visitor.

Additional research content is presented in chapters 5 to 8. Chapter 5 is devoted to visitor knowledge and favorite wildlife species. Chapter 6 examines the attributes of a memorable wildlife encounter with the focus on behavioral, social, environmental and knowledge aspects. Variations among wildlife viewers are represented in chapter 7, including preferred wildlife species and preferred wildlife sounds. Chapter 8 reports the findings of children's wildlife encounters.

Next, chapter 9 presents strategies for wildlife viewing, relating strategies back to the various visitor categories that were examined. Chapter 10 re-examines research questions posed in chapter 1, details the findings of the study and concludes with a series of recommendations.

Wildlife Viewing Potential of EINP

Recognized as a significant wildlife watching area and listed in the "Alberta Wildlife Viewing Guide" (1990), EINP boasts a population of over 30 native mammals, including several thousand Manitoba elk (Cervus elaphus manitobensis), bison, moose and deer. As well, there are six species of amphibians and reptiles, more than 200 species of birds, and over 600 species of plants typical of the transitional aspen parkland boreal forest outlier.

Wildlife viewing in EINP is the prime attraction for visitors (Parks Canada, 1994). EINP has spectacular opportunities for viewing a variety of wildlife. Bison grazing alongside the Parkway that runs through the centre of EINP provide visitors a close look at this native North American animal. Moose and Manitoba elk are also sometimes visible from the roadside. Travelling along the Parkway is also a good opportunity to stop and listen for birds, including the Red-eyed vireo, Rose-breasted grosbeak and Least flycatcher. This Parkway also skirts many ponds and lakes where beaver and muskrat are common. These ponds and lakes teem in summer with waterfowl, including American widgeons, Northern shovellers and Blue-winged teals.

The variety of visitor viewing opportunities includes roadside pullouts and over 100 kilometers of hiking trails. These opportunities allow the visitor to partake in a variety of wildlife encounters, from seeing a herd of rare and native Manitoba elk to catching a glimpse of a Great grey owl.

Background of Study

Several events led to the formulation of this study. Previous quantitative studies, including a 1991 EINP greater Edmonton telephone survey, a 1991 park entrance survey and a 1994 exit survey confirmed that abundant, easily accessible wildlife, especially bison, is a major reason for visits to EINP (Criterion Research Corporation, 1991; Parks Canada, 1994).

The 1991 Elk Island telephone and entrance surveys (Criterion Research Corporation, 1991) did not encourage respondents to yield information about their major reason for visiting EINP that was identified as wildlife viewing. During the entrance survey, respondents did not have the time to describe their wildlife encounters, as there were often other cars waiting in the line, anxious to enter or exit EINP while the survey was being conducted. The telephone survey also did not encourage respondents to describe their wildlife encounters.

However, in-depth interviews were conducted during the 1994 exit survey, where cars were randomly stopped to find out why wildlife viewing was the major reason for visiting EINP. The questions were constructed to encourage a greater discussion of the essence of wildlife encounters. Under the supervision of this researcher, in conjunction with Parks Canada Socioeconomic Division, (personal communication), two University of Alberta students were given formal training in interview techniques, so that they could administer the 1994 exit survey face to face. Despite this effort, an additional survey was needed to define what constituted a memorable wildlife encounter. As it was established that wildlife viewers were the major group visiting EINP, in order to plan a more effective wildlife management program with a wildlife-viewing component, an in-depth analysis using a qualitative approach was needed. At the same time these surveys were occurring, Parks Canada, as an agency, was beginning to move from activities-based management to benefits-based management through the execution of visitor surveys that were at least partially benefits based. EINP is currently re-evaluating its visitor offerings within a systems planning concept.

Some researchers believe that more studies are needed about what people feel about nature in order to supplement the large number of studies of what people are doing in nature (Driver and Ajzen, 1996). Stynes and Stokowski (1996) add that qualitative science can contribute to solving this problem because it assumes that researchers must entre into the live world of their subjects in order to understand meanings and experiences.

Literature Review

Four primary academic principles provide the theoretical underpinnings that guide this investigation. From this theoretical base, the thesis explores four main areas: (a) the challenge of measuring benefits that arise from the human connection to nature (Recreation Demand Hierarchy, RDH); (b) the human need to connect to nature; (c) understanding the complexity of a human / wildlife interaction, i.e., human dimension research; and (d) human dimension applied specifically to wildlife or practicing sound wildlife stewardship and wildlife management by demanding more attention to the study and inclusion of human dimension (HD).

This research concludes that wildlife encounters are very complex and that, through HD studies, some of these complexities can be understood. The seventeen wildlife attributes this study has isolated and examined are often interconnected, which adds to the complexity. These attributes were developed from the pretest and the literature. They were subsequently reaffirmed and expanded during the actual interviews.

Benefits of the Human / Nature Connection (Recreation Demand Hierarchy, RDH)

Several researchers have striven to understand nature and outdoor recreation (Bruns, Driver, Lee, Anderson, & Brown, 1994; Driver, 1994; Driver, Brown, Stankey,& Gregoire, 1987; Driver & Tocher, 1970; Lee & Driver, 1992; Stein & Lee, 1995; Wagar, 1966). In the process, recreational frameworks include nature. Wildlife viewing has been incorporated into these frameworks in varying degrees.

In the 1960s and 1970s, North American managers of public lands ignored the benefits of wildlife viewing and other benefits of on-site recreation experiences and instead focused on facilities and providing the opportunity to partake in recreation activities, that is, activity-based management (ABM, Driver, 1994; Lee & Driver, 1992). Visitor satisfaction and the quality of the recreation experience was largely ignored (Wagar, 1966). This ABM focused on protecting resources, overseeing visitors and providing programs and services. It was concerned with providing highly valued recreation attractions, such as facilities and land (Bruns, et al., 1994). Management efforts largely ignored visitor satisfaction and the quality of the on-site recreation experiences (including the quality of a wildlife viewing experience (Wagar, 1966).

It was not until the development of the RDH that more emphasis was given to the benefits of recreation opportunities, including wildlife viewing. The RDH states that "recreationists have demands to engage in preferred recreation activities within preferred settings to realize satisfying experiences which usually can be viewed as beneficial in and of themselves or which can contribute to immediate or subsequent benefits to those recreationists and perhaps to other people" (Driver & Brown, 1978, p. 8). Within the RDH, a recreational activity might be wildlife viewing in EINP. The setting might be the EINP Parkway and the beneficial experience might be enjoying sights of nature while a later benefit might be an enjoyable recollection (Driver, 1994, p. 9). The Recreational Demand Hierarchy is a sequential relationship between demand for activity opportunities, demand for setting opportunities, demand for experience opportunities and demand for benefit opportunities (G. Swinnerton, personal communication, 1998).

The RDH, a shift from activities (ABM) to experiences (experience-based management, EBM) to benefits (benefits-based management, BBM) explains what BBM is and how it incorporates all recreation components, including wildlife viewing. BBM targets benefits in order to clearly define the outcomes of recreation engagements, including how managers can facilitate realization of recreation benefits (Bruns, et al., 1994). BBM is also called Benefits Approach to Leisure (BAL, G. Swinnerton, personal communication, 1998).

By focusing on the psychological outcomes or experiences realized from recreational engagements, such as wildlife viewing encounters, EBM helped managers to discover that visitors do not care only about activities and settings but also about experiences (Lee & Driver, 1992). The definition of a recreation experience is the "desired psychological result which motivates a person to participate in a recreational engagement" (Driver & Tocher, 1970, p. 53). EBM focuses on desired experiences, such as seeing a moose and her newborn calf, and defines these experiences as "psychological outcomes, desired states of mind and immediate benefits to individuals concurrent with and as a result of their on-site recreation engagements" (Bruns, et al., 1994, p. 3). EBM incorporates ABM by describing a recreation opportunity as "the opportunity to engage in certain desired activities within preferred settings" (described by their component physical, social and managerial attributes) to achieve satisfying experiences. Public land managers are able to manipulate these physical, social and managerial setting characteristics to provide visitors the opportunity to achieve desired experiences (Stein & Lee, 1995).

BBM, which is an extension of EBM and ABM (while incorporating both), goes beyond activity and setting to improving conditions as a result of a visitor's participation in the recreation activity (i.e., wildlife viewing). BBM requires prevention of worse conditions to individuals or groups of people (Bruns, et al., 1994, p. 6). Under BBM, it is critical to recognize a benefit, which is defined as:

> Realization of desired on-site psychological experiences; changes that are viewed to be advantageous or improvements in condition (gains) to an individual (psychological & physiological), to groups, to society, or even to another entity such as an endangered species; or the prevention of worse conditions (Bruns, et al., p. 6).

EBM, on the other hand, does not fully consider on-site psychological changes or other subsequent benefits generated on and off site (Bruns, et al., p. 9). For example, the experience of a memorable wildlife encounter may be cognitively processed into "increased understanding" (Bruns, et al., p. 9). Benefits under BBM may be realized by non-users (Bruns, et al., 1994, p. 13). Benefits, accrued as a result of a memorable wildlife encounter in EINP, could be beneficial to individuals onsite and offsite, for example, improved psychological and physiological conditions, social benefits (to households and communities), economic benefits (to local and regional economies) or environmental benefits (to biophysical and cultural landscapes; Bruns, et al., 1994). Environmental benefits may also encompass benefits associated with ecosystem protection and health (Stein & Lee, 1995).

BBM really refocused research and led to a large number of visitor studies that attempted to find out what visitors wanted in terms of services and desired psychological outcomes. Driver (1986) concluded that, although notable progress has been made during the last fifteen years in improving techniques for monitoring benefits, much more work needs to be done. BBM research on wildlife viewing and other recreational opportunities is critical because it enhances the rationality of resource allocation for wildlife viewing, allows resource planners and managers to define clear management objectives and guidelines for meeting those objectives, helps to identify more clearly those benefits unique to particular wildlife viewing and other recreational opportunities and provides guidance to users in their wildlife viewing and other recreational activities (Driver, 1986).

Driver (1993) also has concluded that BBM research on recreational opportunities such as wildlife viewing could enhance our understanding of personal benefits. Some examples of personal benefits include (a) enjoyment by nature, (b) physical fitness, (c) reduction of tension, (d) escaping noise, (e) outdoor learning, (f) sharing of similar values with others, (g) independence, (h) family intimacy, (i) spirituality, (j) achievement, (k) physical rest, (l) the pleasure of teaching and leading others, (m) risk-taking, (n) risk reduction, and (o) meeting new people. Positive environmental effects include (a) preservation of representative ecosystems, (b) maintenance of species diversity, and, (c) protection of the environment. BBM has clearly given wildlife viewing the recognition it deserves. Now more work is needed to fill in the research gaps.

The Human Need for Nature

For the purposes of this study, nature is defined as wilderness, semi-wilderness and non-built places. Many researchers have provided evidence that people need nature (Driver, Brown, Stankey & Gregoire, 1987; Driver, Nash & Haas, 1987; Ewert, 1996b; Kaplan & Kaplan, 1989; Kaplan & Talbot, 1983; Leopold, 1966; Maslow, 1962; Manfredo, Vaske & Sikorowski, 1996; Mannell, 1996; Montes, 1996; Schroeder, 1992; Schroeder, 1996; Ulrich, 1984; Wilson, 1984).

There are now many studies on the outcomes desired from recreational experiences in outdoor environments. According to Kaplan and Kaplan (1989), the themes of stress mediation, competence building and the search for environmental diversity dominate the literature (p.141). Kaplan and Kaplan also state, "Nature is a valued and appreciated part of life. . . . Nature seems . . . important to people. . . . Human functioning is impacted by its evolutionary origins which speaks loudly for our strong connection to nature in our primitive role before technological advances" (pp. 1, 7).

Ulrich (1984) demonstrated that nature content in a hospital patient's view contributes to faster recovery (p. 420). Many studies provide further evidence for the importance of nature to people (Kaplan & Kaplan, 1989, p. 2).

Kaplan and Talbot (1983) delcare that "the wilderness inspires feelings of awe and wonder, and one's intimate contact with this environment leads to thoughts about spiritual meanings and eternal processes" (p. 178). Individuals feel better acquainted with their own thoughts and feelings, and they feel "different in some way -- calmer, at peace with themselves, more beautiful on the inside and unstifled" (Kaplan & Kaplan, 1989, p. 141). Maslow (1962) details peak experiences as "moments of highest happiness and fulfillment," (p. 40) that are often achieved by a nature experience and other experiences such as creative movement and intellectual insight.

Craik (1970) suggests that human beings have deeply rooted definable and measurable psychological dispositions toward the physical environment -- dispositions, which help drive environmental attitudes, preferences and behaviors. He also reported that the deepest and strongest attachments between people and natural environments may give birth to spiritual experiences in which people feel a sense of connection with a larger reality that gives meaning to their lives. Schroeder (1992) added that in some cases, people report that natural areas provide them a sense of refuge and an escape from the pressures of urban environments and daily routines.

Dwyer, Schroeder and Gobster (1991) stated that research on people's experiences of natural environments shows that strong emotional ties exist between people and elements of natural settings such as trees and forests. Montes (1996) adds that some scientists have argued that natural environments are preferred by many people over indoor or highly urbanized settings because the former offer therapeutic advantages (p. 109). Driver, Brown, Stankey and Gregoire (1987) felt that nature experience provided benefits while built environments had constraining or deleterious qualities. Mannell (1996) states that, in 1993, Hartig and Evans argued that "the way in which humans are programmed by evolution causes people to experience and perceive natural environments in a way that promotes relaxation and restoration; to realize nature benefits is, in a sense, built-in" (p. 412).

Understanding the Complexity of the Human / Wildlife Interaction

A number of researchers have discovered that human / wildlife encounters are extremely complex and very difficult to understand (Dearden, 1989; Duffus & Dearden, 1990; Katcher & Beck, 1983; Kellert, 1993; Leopold, 1966; McVay, 1993; Soulé, 1991; Ulrich, et al., 1991; J. J. Vaske, personal communication, 1997; Wilson, 1984, Wilson, 1993). HD studies of wildlife viewing have helped us to try and understand this. This thesis seeks to explore this complexity further. The attributes that contribute to a visitor's meaningful encounters with wildlife in national parks are poorly understood (Kellert & Wilson, 1993; J. J. Vaske, personal communication, 1997; Wilson, 1984). An understanding of these attributes can only be gained through direct feedback from a variety of wildlife watchers.

A widely accepted definition of a wildlife viewer is an individual who partakes in non-consumptive recreational encounters with wild species to view and sometimes to photograph them (Duffus & Dearden, 1990, p. 221). Non-consumptive is defined as a human recreational engagement with wildlife that does not purposefully remove the wildlife or affect the engagement (Duffus & Dearden, 1990, p. 215). Wildlife viewers are involved in a satisfaction-seeking behavior (Driver & Tocher, 1970; Manning, 1986; Ewert, 1996a). Duffus and Dearden (1990) add that the individual is provided with the desire and means to pursue wildlife by personality variables connected to attitude, cognitive style, environmental stimuli and physiological drives that are combined with socio-economic status (p. 221). Wildlife viewers are induced to encounter the wildlife under natural conditions by a set of antecedent conditions (Duffus & Dearden, 1990, p. 221).

Duffus and Dearden (1990) argue that while there has been much scientific research on understanding the nature of individual species and the ecological intersections, only recently has research begun to document non-consumptive wildlife activity in any detail. Most of the studies are empirical.

Bryan furthered the study of wildlife viewers. In his leisure specialization continuum (LSC), he postulates that recreationists including wildlife viewers may change their level of specialization and commitment over time (1977, 1979, 1980). An analogy in EINP might be where a wildlife viewer begins by observing birds in a zoo, then comes to EINP to view bison from a car along the side of the road, progresses to going out with a group to bird watch and finally bird watches independently and becomes skilled at deciphering bird sounds of a particular species (Duffus & Dearden, 1990, p. 223). Duffus & Dearden (1990) explain that gaining knowledge about a species may add to the level of specialization (p. 224). However, some conflict may occur between users of varying levels of specialization (Jacob & Schreyer, 1980). The specialists may abandon the site as the number of visitors to that site increase over time (Duffus & Dearden, 1990, p. 224).

Some researchers have suggested that wildlife viewing and other forms of contact with wildlife are essential to human well being (Katcher & Beck, 1983; Kellert & Wilson, 1993; Leopold, 1966; McVay, 1993; Soulé, 1991; Ulrich, et al., 1991; Wilson, 1993;). McVay (1993) has proposed that we have a "Siamese" (p. 3) connection to wildlife, but that we do not totally understand our human / animal interactions. Our capacity for survival is impressive so far, but our perceptions of who we are and how we fit into the world ecosystem are still vague. According to Wilson (1993), the more we know of other life forms, the more we respect ourselves: "Biophilia . . . is the innately emotional affiliation of human beings to other organisms" (p. 31).

Kellert and Wilson (1993) have stated that there is an inherent human need for contact with a variety of life forms, which include wildlife. Their biophilia hypothesis asserts the existence in humans of a biologically based inherent need to affiliate with life and life-like processes. Accordingly, human identity and personal fulfillment depend on our relationship to nature. The human need for nature is linked to the influence of the natural world on our emotional, aesthetic, cognitive and spiritual development; it is not restricted to our material exploitation of nature. Biophilia, then, is the natural emotional affiliation of human beings with other living organisms.

A core premise of biophilia is an intrinsic, genetic predisposition to react to biological phenomena. Evidence supporting such a premise would add weight to the argument that wildlife is essential to human well being and growth. An inborn need for wildlife and nature justifies conservation as both a biological and social imperative. The question is whether biophilic responses reside in our DNA and, therefore, our minds, and if they do, whether and to what degree such primitive responses and behavior have been affected by a few millennia of agriculture and technology (Soulé, 1991). More research is needed in this area.

Katcher and Wilkins (1990) have stated that certain natural stimuli, including wildlife viewing, have strong therapeutic effects which are beneficial to individual health and to society. Even if this is plausible, conservationists are still concerned that electronic substitutes for nature (for example, virtual reality) will some day displace the need to experience real animals and real nature (Katcher & Wilkins). More study is needed in this area.

Another important area lacking study is the question of whether natural or man-made sounds are more relaxing (Soulé, 1991). The sound of a Rose-breasted grosbeak singing during a wildlife viewing experience, for example, may provide a person with greater innate satisfaction than does the sighting of a bison through a car window. The interplay of a multitude of other variables that influence our choice of recreational preference suggests the extreme complexity of understanding the wildlife viewing phenomenon.

There are also important gaps in the understanding of why some wildlife viewers prefer larger animals to smaller ones. Soulé (1991) concluded that noticeability is often proportional to size. Most bacteria and fungi, despite their bio-geo-chemical dominance, are not easily visible and, therefore, unnoticed by most people.

Prior to 1980, limited research had been completed on the benefits of wildlife encounters in national parks. Henning (1979) has stated that natural resource managers, when making sound management decisions, must include the public in the decision-making process. Hendee and Schoenfeld (1973) felt it was important for parks to include a HD in wildlife management. Vaske, Decker and Manfredo (1995) felt the two areas are inseparable, since wildlife viewing may influence wildlife behavior and populations as well as the quality of visitor experience.

In one study of various types of preferred wildlife-viewing experiences, users were divided into subgroups based on their motivation for taking trips to view wildlife (Driver, Tinsley & Manfredo, 1991). This study refined and expanded upon a classification of motivational factors for wildlife viewing and labeled desirable psychological outcomes developed by Driver, et al. (1991).

More research is needed on how park information affects the wildlife-viewing experience. Information plays a significant role in determining the choice of recreation type, the manner of participation and the recollections of recreation experience (Roggenbuck & Berries, 1982). Visitors seek information because it facilitates decision-making, increases the probability of realizing the desired satisfaction or benefits and also influences leisure choices (Spotts & Stynes, 1985). Information is an effective means of increasing the practice of wildlife viewing and other recreational activities (Roggenbuck & Berries). Roggenbuck and Berries have also found that instead of regulation and manipulation, wildlife viewers and other wilderness users preferred to have adequate information provided to them. As a result, many wilderness managers have implemented information and education programs in an attempt to alter user behavior and reduce environmental impact.

Further study needs to be conducted on how tourists perceive wildlife ecology, animal behavior, and the dangers associated with some wild animals (Haysmith & Hunt 1995; Maw, 1989). Because wildlife viewing is likely to increase, this information gap should be eliminated in order to minimize disruptions to wildlife populations and to maximize the pleasure of the wildlife-viewing experience.

J. J. Vaske (personal communication, 1997) stated that while interest in the HD of wildlife watching has grown considerably, this is nevertheless a new area of scientific inquiry involving a broad range of disciplines. He added that, as a result, the gaps in knowledge are considerable, reflecting a beginning phase in scientific development in the field. He concluded that the relatively small number of studies in the HD of wildlife watching, with even fewer examinations of human and wildlife interactions, is evidence of the need for further study in this area. If one of the goals of wildlife research is to facilitate meaningful and environmentally sustainable wildlife-viewing opportunities, research on what constitutes a quality experience is far from complete. Meaningful wildlife encounters must be better understood if we are to diminish wildlife and people conflicts and enhance responsible and substantive wildlife encounters through educational efforts. Therefore, HD studies hold considerable promise for wildlife managers (Decker, et al., 1992).

There is an immediate need for more research on wildlife encounters in order to optimize the wildlife viewing experience while protecting the environment. Wildlife viewing is on the increase, particularly in North America. A federal-provincial task force commissioned by Statistics Canada to conduct a survey on wildlife-related recreational activities confirmed this (Environment Canada, 1992). The study, which questioned over 80,000 Canadians, found that 18.3 million Canadians were involved in some form of wildlife-related activity. Similar levels of participation seem to occur within the United States. In the state of Wyoming alone, 190,000 residents and 5,000,000 non-residents actively participate in non-consumptive wildlife use annually (Kruckenberg, 1988). The trends are similar for Elk Island National Park, where wildlife watchers now comprise the major visitor group (Parks Canada, 1994). Other studies (Decker, et al., 1989; Vaske, et al., 1995) lend support for promoting the beneficial use of wildlife in a sustainable manner and recognize the need to gather more data on the rapidly growing leisure activity of wildlife viewing.

Implementing HD (Human Dimensions) in Wildlife Management

There are several researchers who feel that in order to have effective wildlife management the HD must be included (Brown, 1984; Bryan, 1996; Driver, Manning & Peterson, 1996; Ewert, 1996b; Grumbine, 1994; Manfredo, et al., 1996; Schroeder, 1992; Schroeder, 1996). Duffus & Dearden (1990) add that the call to include social science -- the human dimension -- in wildlife management began decades ago (p. 217).

Ewert (1996b) defines HD research as, "The scientific investigation of the physical, biological, sociological, psychological, cultural and economic aspects of natural resource utilization at the individual and community levels" (p. 6). According to Manfredo, et al. (1996), HD of wildlife management is identifying and understanding what people do and think regarding wildlife management. The Natural Resources Unit at Colorado State University defines HD research as: "an area of investigation which attempts to describe, predict, understand, and affect human thought and action toward natural environment" (p. 54). This includes investigations on an individual, institutional, societal or cultural basis (p. 54). Perry Olson, Director of Colorado's Division of Wildlife, once said that "managing wildlife is 10 percent biology and 90 percent managing people" (p.53). Ludwig, Hilborn and Walters (1993) argued that it is more important to manage people than resources and that this approach helps to address human behavior. People have such a substantial impact on resources that no sane resource manager should ignore their impact.

More and more, research on the social structure of wildlife viewers is being seen as an integral part of wildlife and ecosystem management. Duffus and Dearden (1990) proposed a framework called the NCWOR (Non-Consumptive Wildlife Oriented

Recreation) which is defined as a human engagement with wildlife that does not purposefully remove the species or permanently affect the engagement (p. 217). This framework also includes three elements: the focal species or species groups, the human user and the history of the relationship between the two (Duffus & Dearden, 1990, p. 217). Duffus and Dearden add that the demand for wildlife contact is affected by history in two ways: firstly, through the influence of humans on animal species and their habitats and, secondly, by the cultural conditioning of perceptions over time (p. 218).

Driver, Manning and Peterson (1996) state that several key concepts are involved in the definition of ecosystem management (EM). These are "management", "multiple use," "needs of people" and "sustained ecosystems" (p. 109). There are two necessary components of EM, a social component of the HD and the biophysical component or dimensions. (Wildlife viewing would be included in the social component.) In developing the EM plan, Driver, Manning and Peterson evaluated all relevant biophysical and social trends, conditions, needs and effects that would take place, including those new issues that would arise (p. 120). Wildlife viewing in EINP could be included in this assessment of trends.

Ewert (1996a, 1996b) sums up the importance of studies on wildlife viewing and other HD research in developing an effective resource management program. He adds that HD research involves basic understanding of human / natural environmental interactions. These could include how people interact with wildlife through a wildlife viewing experience.

Schroeder (1996) reaffirms the value of HD research such as wildlife viewing studies (p.13). In the Black River Study, he designed the interview process so the format was as open as possible and people could describe their experience in their own words. Schroeder, referring to his 1992 article, adds that HD studies help reveal ways in which people are experientially and emotionally related to their environments (p. 26.). As well, Schroeder discusses the restoration of endangered ecosystems by volunteers, so that the process of ecological restoration includes restoring the human experience of relationship to the ecosystem, that is re-creation of the human spirit.

Schnaiberg (1975) adds that there is a link between humans and the environment, whether through wildlife viewing or other forms of human / environment encounters. Grumbine (1992) furthers the thought that effective wildlife management must include the HD: "The view of people's relationships to land and resources is quite different under the ecosystem paradigm. In this view, humans are embedded in nature. From an ecological perspective, this means that 'people cannot be separated from nature. Humans are fundamental influences on ecological patterns and processes and are in turn affected by them' " (p.235). Manfredo, et al. (1996) add that attempts to plan for the future should include an assessment of public values toward wildlife and how these may change (p. 57).

Effective Wildlife Management Includes HD (Human Dimension)

Elsner, Lewis, Snell and Spitzer, (1996) add that "successfully incorporating the concerns of humans into ecosystem management means giving equal consideration to social as well as physical and biological concerns" (p. 9). HD information can be useful for natural resource management that involves political decisions (Manfredo, et al., 1996, p. 62); provide a scientific basis for justifying an action (p. 69): and (3) be used in forestry to develop a dynamic relationship between forestry and society (Brunson, 1996, p. 91). Duffus and Dearden (1990) add that recreational non-consumptive wildlife use has very positive conservation benefits, including the changing of attitudes toward wild animals and natural habitats (p. 213).

Including the HD in wildlife management is critical. Schindler, List and Steel (1993) state that "wildlife, plants and humans have equal rights to live and develop on earth," and that we have "an increasingly environmentalist society" (p. 38). Consequently, when tasked with preserving a natural area such as a national park and its wildlife management component, we must include the HD. Grumbine (1992) adds that much of the current literature in natural resource management speaks to a growing awareness of issues, such as biodiversity, that go far beyond biology or silviculture and involve social, economic and political forces.

Implementing HD in wildlife management is important where there are competing interests between public use and preservation, e.g., development of a new wildlife viewing pulloff. Hence, it is critical to include the HD in wildlife management. Brown (1984) says that what is important in conducting an environmental impact assessment on wildlife management pulloffs is to ask what are the various "types" of values held by the public (e.g., conceptual, relational, and object), and what specific groups hold what specific values? Ewert (1996a) adds that values should be incorporated into wildlife management and other aspects of natural resource management decisions (p. 260). Bengston (1994) furthers this thought by saying that we need to know what values are more amenable to generating a solution, and managerial approaches that are socially and politically correct, in addition to being biologically correct.

Conclusion of Literature Review

Increasingly, there is a need for studies on human / wildlife interactions. Societal values have changed as people's role in nature is moving toward a biocentric approach (Scheffer, 1976). Researchers have concluded that it is difficult to measure the non-consumptive nature of a wildlife encounter as it exists in the psychological domain of the wildlife watcher (Duffus & Dearden, 1990). The literature review establishes that there is a need to examine the attributes of a wildlife encounter and assesses the human need for nature.

Various models, such as ABM, EBM and BMM, provided a strong foundation for understanding the wildlife viewer. BBM studies, in particular, have helped to shed light on aspects of the wildlife viewer to identify the need for a study on wildlife viewing attributes.

Human wildlife encounters are very complex and difficult to understand. However, significant headway has been made. Work by Duffus and Dearden (1990) provides an excellent integrated framework that links wildlife viewers and the biological side of wildlife management, between the disciplines of ecology, animal behavior and recreation together (NCWOR).

Bryan's leisure specialization continuum provides a platform for further studies expanding on how wildlife viewers progress from one wildlife viewing experience to another (1977, 1979, 1980). The need for a multidisciplinary approach to wildlife management is now clear, but the call for social science input into wildlife management began decades ago (Leopold, 1940).

This study will help build on existing literature and helps to explain the model in Figure 1:

1. The Recreation Demand Hierarchy, RDH, developed in the late 1970s, states that recreationists engage in preferred recreation activities in preferred settings to realize satisfying experiences that can be viewed as beneficial or can contribute to subsequent benefits to themselves or other people. The Recreation Demand Hierarchy encompasses ABM, EBM and BBM (Driver & Brown, 1978).

2. Activity-Based Management, ABM, developed in 1960s and 1970s, focused on facilities and providing people the opportunity to partake in recreational opportunities, but largely ignored benefits and the quality of the recreational experience (Lee & Driver, 1992).

3. Experience-Based Management, EBM, following the development of ABM, focused on psychological outcomes or experiences realized from recreational engagements. Experiences are defined as "psychological outcomes, desired states of mind and immediate benefits to individuals concurrent with and as a result of their on-site recreation engagements" (Bruns, et al., 1994, p. 3).

4. Benefit-Based Management, BBM, extending development of ABM and EBM, incorporates both and goes beyond activity and setting to improved conditions as a result of visitors' participation in the recreation activity. Benefits are defined as "Realization of desired on-site psychological experiences; changes that are viewed to be advantageous or improvements in conditions (gains) to individuals (psychological & physiological), to groups, to society, or even to another entity such as an endangered species; or prevention of worse conditions (Bruns, et al., 1994, p. 9).

5. Leisure Specialization Continuum, LSC, developed in late 1970s, says that recreationists (including wildlife viewers) may change their level of specialization and commitment over time (Bryan, 1977, 1979, 1980).

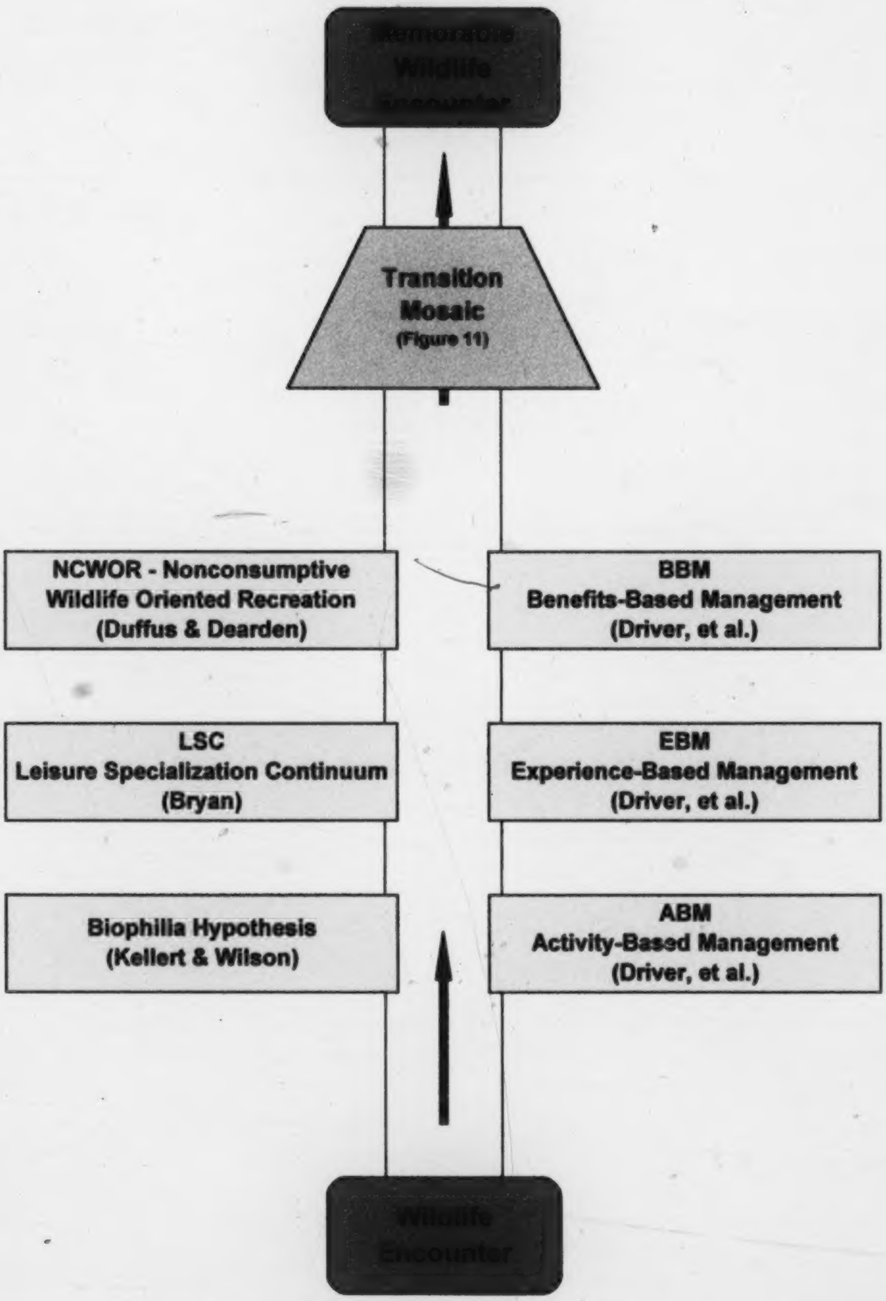
6. The biophilia hypothesis, originated in 1984, asserts the existence in humans of a biologically based, inherent need to affiliate with life and life-like processes (Wilson, 1984).

7. Non Consumptive Wildlife Oriented Recreation, NCWOR, developed in 1990, is defined as a human engagement that does not purposefully remove the species or permanently affect the engagement (Duffus & Dearden, 1990).

The theoretical premise discussed in the literature review brought important insights. Hence, this study develops a Transition Mosaic Model (TMM, 1998) asserting that people, when experiencing a focused memorable wildlife encounter, embrace single attributes or combinations of attributes and that people tend to "jump" in and out of modes, moving from primal to cultural to simple to complex (see Figure 1).

The literature review reaffirmed that while there has been much headway in understanding biological processes and individual species, more work is needed in understanding and integrating the human dimensions of a wildlife encounter. The fundamental purpose of this thesis is to cast in a new light the attributes of a memorable wildlife encounter. Increased knowledge of the wildlife viewer may lead to better levels of expectation, motivation and satisfaction while leading to increased protection of the wildlife being viewed.

Figure 1: Theoretical framework for a memorable wildlife encounter.


Memorable Wildlife Encounter
Transition Mosaic
(Figure 11)
NCWOR - Nonconsumptive Wildlife Oriented Recreation
(Duffus & Dearden)
BBM
Benefits-Based Management
(Driver, et al.)
LSC
Leisure Specialization Continuum
(Bryan)
EBM
Experience-Based Management
(Driver, et al.)
Biophilia Hypothesis
(Kellert & Wilson)
ABM
Activity-Based Management
(Driver, et al.)
Wildlife Encounter

Chapter 2: Methodology

Wildlife Attributes

The basis of this thesis has been the development of seventeen wildlife viewing attributes that were isolated by asking respondents what was their most memorable wildlife encounter. These seventeen attributes fell into behavioral, social, environmental and knowledge categories. Examples of attributes include wildlife being close, size and shape of wildlife and the perception that the animal is free or in its natural environment.

Research Question

The central research question of this study may be stated as: what is the range of social, behavioral, environmental and human dimensions which comprise the attributes associated with a human wildlife encounter? Further, how do these contribute to individual perceptions of what constitutes a quality, memorable wildlife experience, isolated within a spectrum of visitors?

Study Purpose

A number of studies have attempted to address factors that influence the quality of a recreational experience (Decker, Brown, Connelly, et al., 1992; Decker, Brown, Mattfield, 1989; Driver, et al., 1991; Eagles, 1992; Haysmith & Hunt, 1995; Hendee & Schoenfeld, 1973; Roggenbuck & Berries, 1982). While building on previous research, the purpose of this study is to understand the attributes of a memorable wildlife encounter in EINP and to document and assess the importance of wildlife as an intrinsic, i.e., naturally occurring, attraction in national park environments. The results would contribute to enhanced visitor experiences. They would also have implications for park design, facility requirements, educational and interpretive opportunities, as well as for overall visitor and wildlife management. Hence, this study will attempt to isolate what constitutes a memorable visitor wildlife encounter within a spectrum of visitors.

The study assumes that there will be differences in response depending on whether the person is (a) a non-local visitor / long-distance or international traveler, (b) a local urban-based user / an Edmontonian, (c) a local rural user, (d) a student, or (e) a park employee.

Study Objectives

The objectives for this study are first to understand the complexity of behavioral, social, environmental and knowledge variables that constitute a memorable visitor wildlife encounter in EINP; and second, to isolate the attributes of what constitutes a most memorable visitor wildlife encounter within a spectrum of defined park visitor categories.

Attribute Clusters of Wildlife Encounters

For the purposes of this study, attributes are defined as the factors or characteristics wildlife viewers list in describing what constitutes a wildlife encounter that they remembered. These attributes were developed to specifically address the range of anticipated responses in this study.

The predefined attributes surrounding this study were completed following the pretest analysis. Seventeen attributes emerged during the pretest and the literature review that fell into four categories or clusters. Conclusions will be developed in accordance with the following attribute clusters and will be shown in Figure 2:

A. Behavioral (wildlife-caused)

1. Wildlife being close / being close to wildlife / sense of intimacy with wildlife
2. Aggressive behavior of wildlife / animals fighting / threat of personal danger / seeing someone injured
3. Size / shape of animal
4. Wildlife exerting control over people / wildlife in command
5. Unspecified animal movement / fast movement
6. Maternal-paternal behavior / preference for young / seeing births

B. Social (with other people or participating in EINP activity)

1. Presence of children enhances wildlife experience
2. Presence of others enhances wildlife experience

C. Environmental (natural environment adds or detracts from experience)

1. Element of surprise / unexpected / unusual / novelty
2. Availability of a particular species
3. Experience of stillness / quiet / isolation / solitude
4. Quantity of wildlife is important

D. Knowledge (requirement of having knowledge of wildlife characteristics

1. Rarity of wildlife
2. Perception that the species is free or in its natural environment
3. Feeling that a species represents ties to past or is important for historic reasons
4. Feeling that a species is endangered
3. Feeling that the animal is cared for (see Figure 2).

Study Area

EINP is located approximately thirty-five kilometers east of the city of Edmonton on the Yellowhead Highway, Highway 16 (see Figure 3). It was established as a wildlife sanctuary for Manitoba elk (Cervus elaphus manitobensis) in 1905. Today EINP covers only 194 square kilometers of the transitional aspen parkland that once covered 55,000 square kilometers. The rolling topography comprising knob and kettle terrain is covered by aspen groves, grassland areas and some pockets of spruce. About 20% of EINP is small, shallow ponds and lakes.

Figure 2: Overview of wildlife viewer attributes in EINP. (See pp. 27-29 for explanation of how model works)

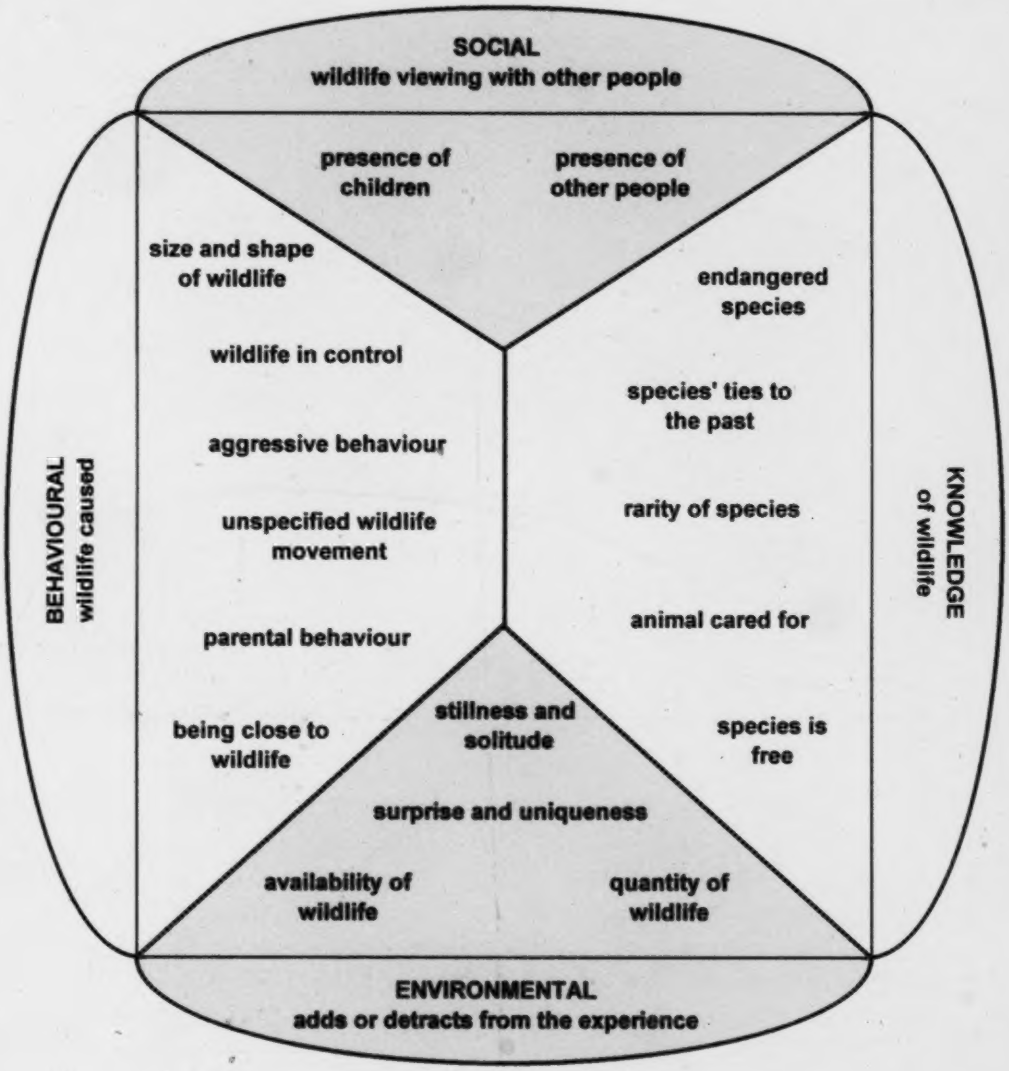
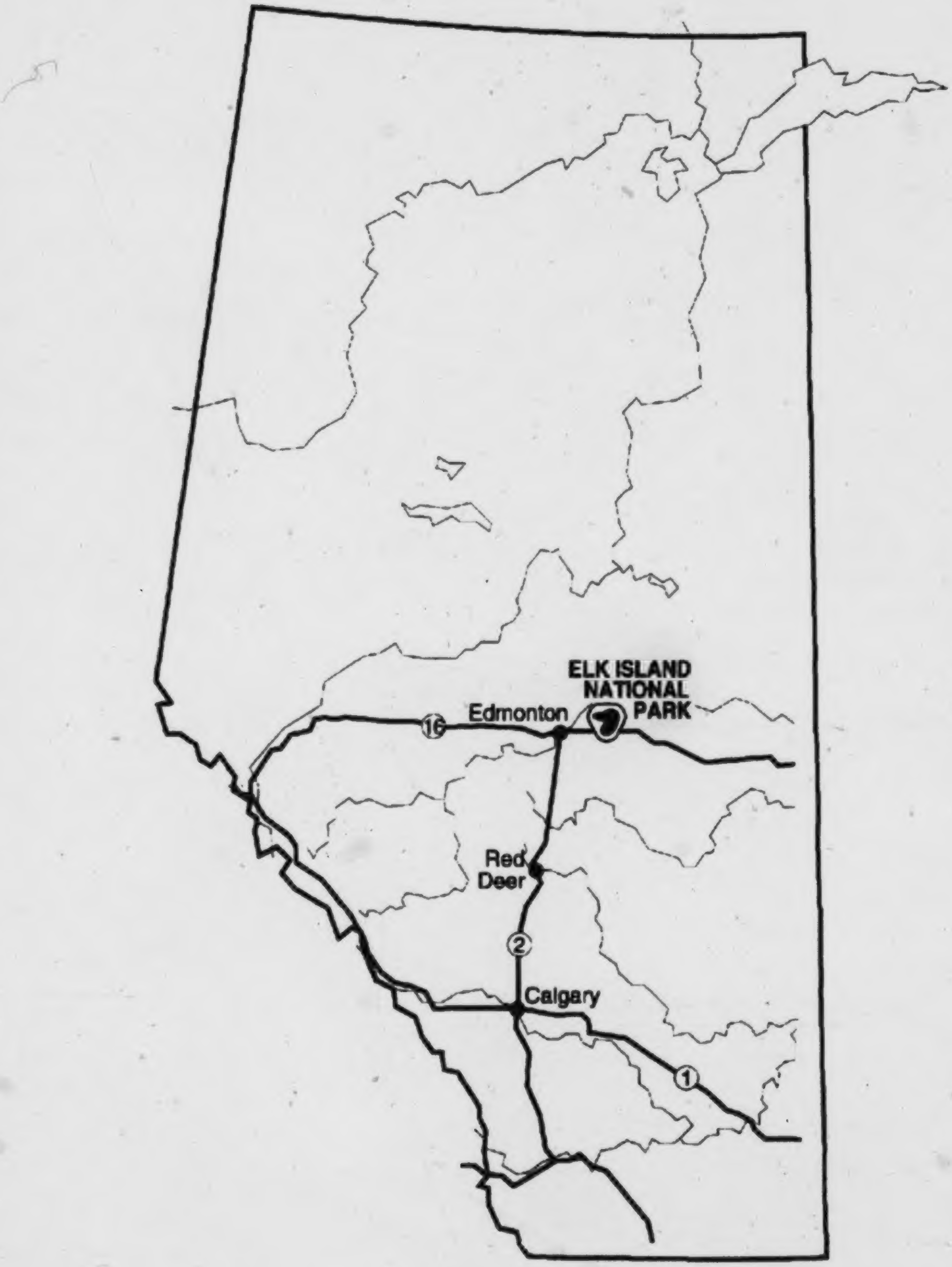

SOCIAL
wildlife viewing with other people
presence of children
presence of other people
size and shape of wildlife
wildlife in control
aggressive behaviour
unspecified wildlife movement
parental behaviour
being close to wildlife
endangered species
species' ties to the past
rarity of species
animal cared for
species is free
stillness and solitude
surprise and uniqueness
availability of wildlife
quantity of wildlife
BEHAVIOURAL
wildlife caused
KNOWLEDGE
of wildlife
ENVIRONMENTAL
adds or detracts from the experience

Figure 3. Location of Elk Island National Park, Alberta, Canada.

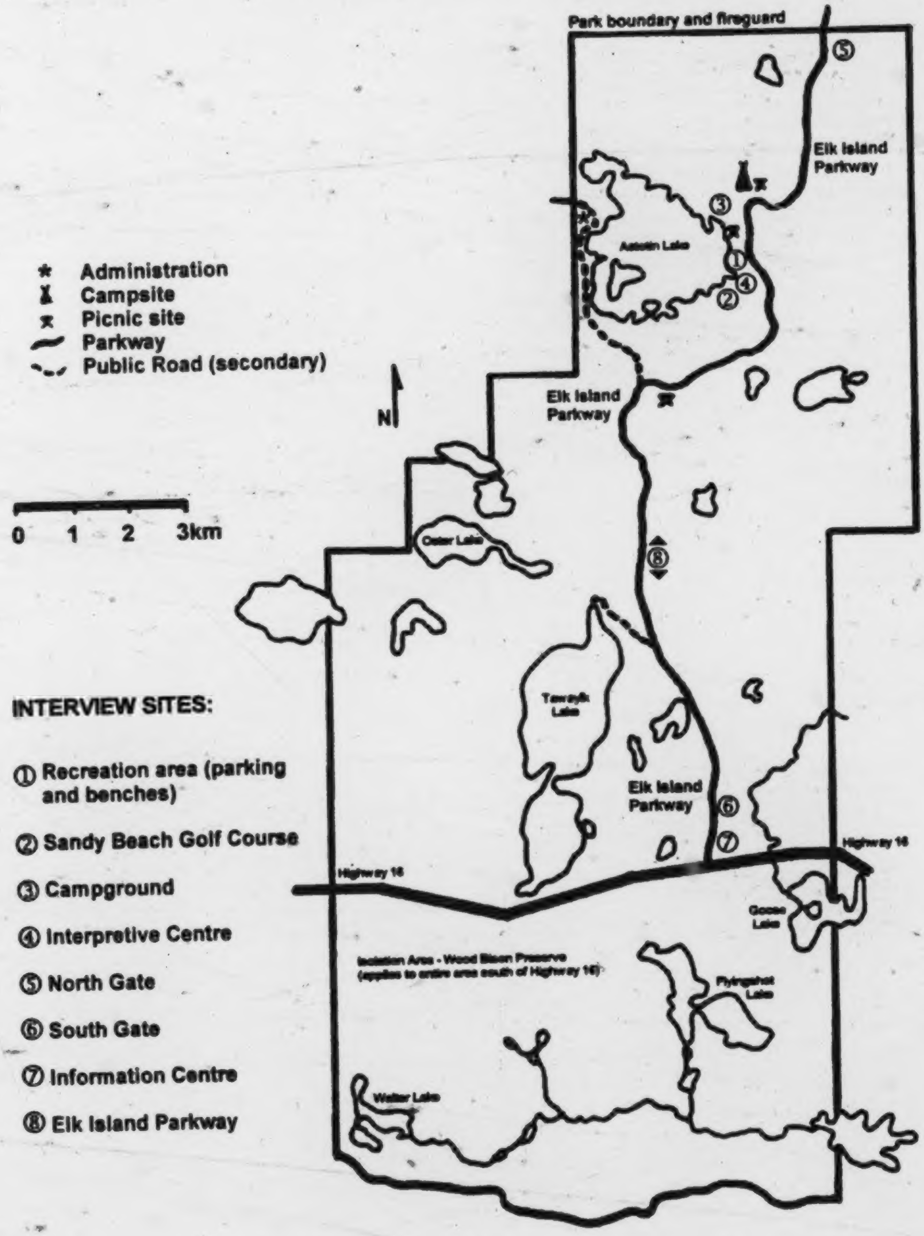

ELK ISLAND
NATIONAL
PARK
Edmonton
16
Red
Deer
2
Calgary
1

Interview Sites

Several areas throughout EINP were delineated as interview sites in order to ensure samples were chosen from all visitor groups (see Figure 4). All the major areas where visitors congregate were sampled. As well, times and days of interviewing were varied (see Appendix A). The principal interview sites used during this study, in order of priority, included (a) the Astotin Recreation Area main parking lot / beach area, (b) the Sandy Beach Campground, (c) the Interpretive Centre, (d) the Information Centre, (e) the Parkway (the road through EINP), (f) the North and South Gates, and (g) the golf course.

With these face-to-face interviews, what was important was having access to people who could respond to the questions (University of Alberta Department of Sociology, Population Research Lab, Personal communication, 1994).

Figure 4: Study area - Elk Island National Park, Alberta, Canada.


Park boundary and fireguard
⑤
Elk Island Parkway
③
Astotin Lake
①
④
②
* Administration
Campsite
Picnic site
Parkway
Public Road (secondary)
Elk Island Parkway
N
0 1 2 3km
Oster Lake
⑧
Tawayik Lake
INTERVIEW SITES:
① Recreation area (parking and benches)
② Sandy Beach Golf Course
③ Campground
④ Interpretive Centre
⑤ North Gate
⑥ South Gate
⑦ Information Centre
⑧ Elk Island Parkway
Elk Island Parkway
⑥
⑦
Highway 16
Highway 16
Goose Lake
Isolation Area - Wood Bison Preserve
(applies to entire area south of Highway 16)
Flyingshot Lake
Walter Lake

Research Instrument and Time and Location of Survey

The final, complete survey instrument is contained in the Appendixes of this text. This survey was conducted during June, July, August, September and October of 1995 and 1996, with an approximately equal number of respondents surveyed each year. A total of 402 interviews were completed.

A broad cross-section of different visitor ages, races, singly or in groups, was sampled at different times of the day (see Appendix A) and during different days of the week, including weekends. The most prolific locations in order of visitor frequency were the Astotin Recreation Area (30.5% of all interviews), EINP Parkway (22.7%), the Interpretive Centre (18.1%) and Sandy Beach Campground (11.6%, see Table 1 and Appendix B). Several different locations were utilized for the survey with the same locations chosen for both 1995 and 1996.

The Astotin Recreation Area parking lot proved to be the best survey location because visitors congregate in this main parking lot after their wildlife experiences. After driving on the Parkway, once visitors had reached the Recreation Area, they seemed very receptive to recounting their wildlife viewing experiences. Since most of the visitor wildlife encounters took place along the Parkway, the Parkway itself was the second best location (22.7%) for contacting visitors immediately after their wildlife experience.

Both the Interpretive Centre (18.1%) and Sandy Beach Campground (11.6%) were ideal in terms of being able to spend more time with visitors to elicit in-depth responses. Visitors in these two locations seemed to be more relaxed, and were more willing to take time to answer the questions.

Table 1. Location of Survey in EINP

Locations	% of Valid Interviews
Astotin Recreation Area	30.5
The Parkway	22.7
Interpretive Centre	18.1
Sandy Beach Campground	11.6
Golf Course	6.0
Information Centre	5.5
North, South or both Gates	5.5

Note. Valid is defined as respondents who provided an answer and excludes those who did not provide an answer and includes cumulative data for 1995 and 1996.

Neither the North nor the South Park Gates, where visitors are stopped and entry fees collected, were ideal locations for the survey either because visitors had not yet had an EINP wildlife encounter or because, due to the frequent traffic tie-ups, visitors were reluctant to spend time answering questions.

A professional interviewer from the Department of Sociology, University of Alberta gave a telephone briefing to ensure that the interview process was conducted properly and professionally. To have consistency in the results, the same researcher, namely the author, conducted all interviews. The researcher did not confine the respondents to their first answer, but noted the full range of replies to each question.

Although not included formally in results of this survey, this questionnaire was also administered to a small group of respondents in the nearby city of Fort Saskatchewan, 30 kilometers from EINP, and in Jasper National Park, Alberta, Canada.

Definition of a Wildlife Viewer

In their most focused form, wildlife viewers can be classified as ecotourists or people who select a travel experience and destination primarily for nature-oriented experiences. However, for the purposes of this study, wildlife viewers are defined as any visitors to EINP who have directly viewed wildlife in a firsthand encounter. Wildlife is broadly defined here as any indigenous species of flora or fauna in EINP. When respondents hear or mention the word "wildlife," they generally mean a native animal, mammals and birds primarily and, to a lesser extent, invertebrates. On rare occasions the joy of a plant encounter was mentioned. For the purpose of understanding the findings of this study, wildlife will invariably mean native animals.

Study Design

Several researchers / research groups have postulated that it is sometimes necessary to use qualitative analysis to analyze further results (Kelly, 1991; University of Alberta Population Research Lab, personal communication, 1994). This study uses a qualitative approach to its design. In developing this study, the Department of Sociology, Population Research Lab at the University of Alberta (Population Research Lab, personal communication, 1994) and the Parks Canada Socioeconomic Division, 1994 were consulted. The Population Research Lab assessed the appropriateness and the sequencing of the questions and several modifications to the questionnaire were made as a result.

Kelly (1991) argued that in order to better understand recreational choice behaviors, one will probably require non-standard survey procedures, including direct observation of participants, in-depth interviews and the use of interactive focus groups. Due to the exploratory nature of the study, the semi-structured interview method was believed to be the most effective in receiving open-ended responses to a variety of questions. Personal interviews can provide the greatest flexibility in gathering data because they allow the interviewer to probe for additional information by asking for clarification. The data from the observations consists of detailed descriptions of program activities as well as participants' and staff behavior.

A number of steps were involved in constructing the final interview guide. An extensive literature review was conducted on the wildlife viewing experience and on methods of conducting qualitative analyses (Patton, 1987). Experts in the wildlife viewing field were also consulted by telephone, which produced minor changes in the approach to the questionnaire wording (B. L. Driver, personal communication, 1995; M. J. Manfredo, personal communication, 1995). Once the interview guide had been constructed, its appropriateness and effectiveness were assessed with the pretest.

The pretest was targeted first at those visitors along the Parkway who were having a wildlife encounter. Oftentimes, these visitors would stop along the Parkway to view a moose or other wildlife. While minimizing the chances of scaring the moose or other wildlife away, visitors were approached while in their cars. Some visitors were receptive to sharing their most memorable encounter; some were not. Sometimes the memorable encounter related directly to the wildlife being viewed, while sometimes it triggered memories of wildlife encounters in the past.

Several meetings were held with EINP staff regarding the proposed methods to be used in the study. When designing the interview instrument, a standardized, open-ended approach was developed using Patton's method of question sequencing (Patton, 1987). A number of basic questions were worded quite precisely and ordered to permit the interviewer flexibility in probing certain subjects in greater depth.

The basic purpose of using the standardized open-ended interview was to minimize interviewer effects by asking the same questions of each respondent (Patton, 1987). Because the interview was systematic, interviewer judgment during the interview was reduced. Data analysis was also easier because it was possible to locate each respondent's answer to the same question rather quickly.

Pretest.

What is needed in a pretest during a qualitative survey is to target those people who are as close as possible to the target population and then to repeat the questions until nothing new is gathered (Population Research Lab, University of Alberta, personal communication, 1994). The pretest of the interview questions was completed with 40 interviews from June 1 to 10, 1995 at EINP. The respondents understood all pretest questions. A short knowledge test that asked visitors to identify common native animals, birds and plants in EINP was administered at the end of the questionnaire to further isolate levels of knowledge among visitors.

The purpose of the pretest was to determine: (a) if the questions were effective in soliciting responses, (b) if the level of detail being solicited was appropriate, (c) if the level of detail met the objectives of the study, (d) if the interview questions were too long or too short, and (e) if the wording of the questions was clear and appropriate.

During the pretest, all visitor areas in EINP were sampled, including the entrance points (North Gate, South Gate), the Information Centre, along trails, trailhead parking lots, in the Astotin Recreation main parking lot / beach area, picnic areas, along the EINP Parkway, at the golf course, Sandy Beach Campground, the Astotin Interpretive Centre and the Bison Paddock. The trails and trailhead parking lots produced fewer results because visitors hesitated to interrupt their hiking.

The interview process.

The interview began with background and demographic questions. Once the main purpose of the respondent's visit was established, the questions then focused on experiences. Such questions, the pretest revealed, encouraged the respondents to talk descriptively. Greater detail was elicited while filling out the descriptive picture. After some experience or activity had been described, respondents were asked their opinions and feelings about the behavior and actions described. During the pretest, it was found that soliciting the correct names of selected wildlife species from a series of laminated photos was found to be threatening; therefore, these questions were administered at the end of the interview. Discovering what people know and what skills they possessed became easier once rapport and trust were established in the interview.

Focus group interviews.

Focus group interviews also employed a standardized open-ended approach, and their question content focused on the respondents' most memorable wildlife encounter. The focus group interviews were held with groups of three to eight people for two or more hours. Focus groups included: (a) members of the Friends of Elk Island Society, (b) teachers and students (primary, secondary and University of Alberta students, (c) Members of the Fort Saskatchewan Natural History Club; and (d) park staff. The objective of such interviews was to obtain data in a context in which people could consider their own views within the context of others' views.

Whether conducting focus group interviews or one-on-one interviews, the primary data of in-depth, open-ended interviews are quotations. What people say, how they feel, what they think, and what they know are learned from the interviews.

Limitations of this study.

Limitations of this study include:

1. The study needs to be expanded to include other protected areas that offer wildlife viewing.
2. How wildlife viewers react to other wildlife species needs to be examined. For, example, the validity of wildlife attributes in this study could be tested in some of the African national parks and other protected areas where wildlife viewing is a major focus.
3. The study needs to be expanded to include more in-depth examination of specific groups of people. For example, as Vietnamese and other groups of oriental origin now

visit EINP, these groups need to be examined in greater detail. This study on these groups could also be conducted in Edmonton, where these people live.

4. Some of the respondents surveyed were from Europe and the US. These respondents could be surveyed in more detail to determine the universality of attributes like size / shape, and aggressive behavior.

5. More study into the primal (instinctive) nature of some of the wildlife encounters needs to be made. A promising, but little researched area of study is with children aged 10 years and under and some of their more dominant attributes of a wildlife encounter. This includes fear of a leech because it resembles a snake and the children's apparent focus on wildlife movement.

6. Differences between categories of visitors need to be examined, perhaps, in a telephone survey, to explore further whether or not certain wildlife attributes such as aggressive behavior and size / shape are universally important.

7. More study needs to be done on the environmental benefits of wildlife viewing and whether or not there are positive benefits, given the apparent heightened interest in wildlife viewing.

8. Further study needs to be conducted on what is considered a negative wildlife encounter and the implications of this, such as whether this type of experience may discourage people from hiking.

9. More study is required on whether or not there is a link between the attributes isolated in this study and why people poach. For example, is fear of a wild tiger one of the reasons it is persecuted?

10. Additional study is needed to examine linkages between "wildlife jams" in EINP and other Canadian and foreign national parks and the attributes that were isolated in this study. Visitors seem so drawn to connect with wildlife that they sometimes create traffic safety problems, for example, to view an elk on the side of the road.

11. More work needs to be done on individual attributes, for example, why aggressive behavior seems to be a universal attribute of wildlife viewers.

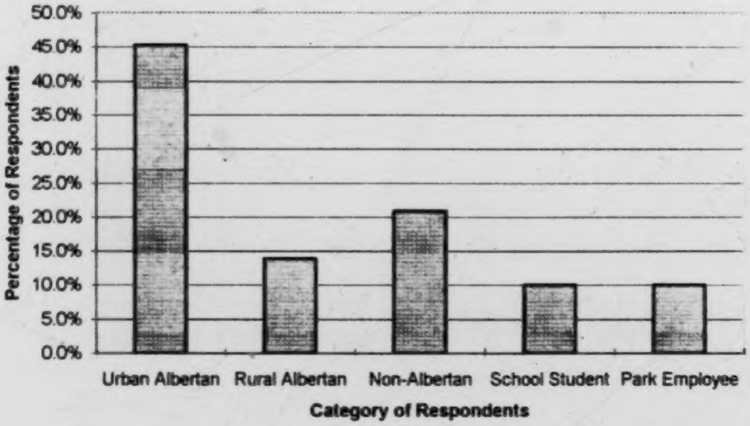
12. More study needs to be done on the relationship between the attributes isolated and the benefits of wildlife viewing.

Chapter 3: Wildlife Viewer Characteristics

Category of Respondents

As indicated in Appendix D, the principal residence of respondents was categorized into urban Albertan (45.3%), rural Albertan (13.9%), non-Albertan (20.9%), school student (10.0%) and park employee (10.0%, see Appendix H). Most respondents (79.2%) lived within greater Edmonton or within an hour's drive of Edmonton (see Figure 5). Urban Albertans were largely from Edmonton with minor numbers from Calgary. Rural Albertans came mainly from within 100 kilometers of EINP. Non-Albertans were from the rest of Canada, USA, Europe, South America and the Far East.

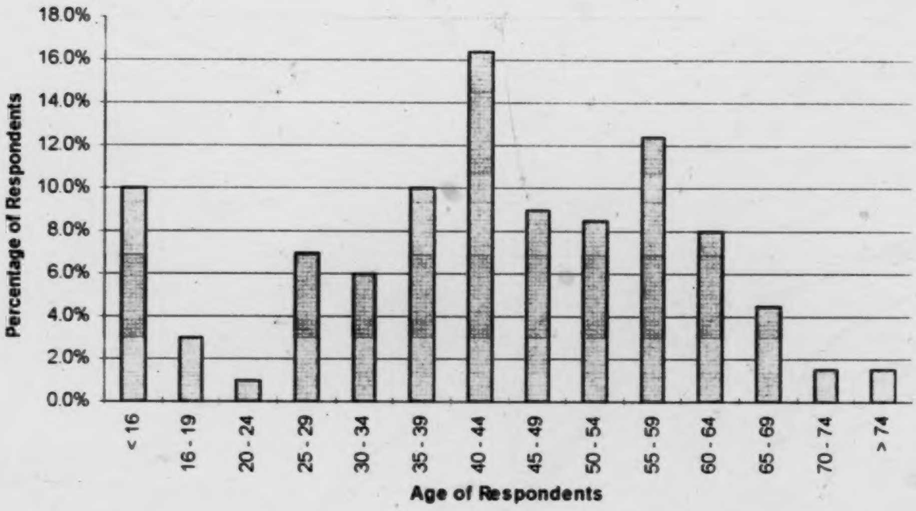
Figure 5. Category of respondents in EINP.



Age

Most respondents were between the ages of 35 and 64 years, (65.2%, see Appendix E). Within this age bracket, the 40 to 44-year-olds were at 16.7% (see Figure 6). Children under 16 years old made up 10.1%. These results are consistent with the Criterion Study (Criterion Research Corporation, 1991).

Figure 6. Age percentage of respondents visiting EINP.



Education

The educational levels of respondents were as follows: 11% had technical school, 10% were college-educated, 30% had university degrees and 16% had a post-graduate degree. In total, 56% of visitors had a college or university education.

Gender, Family Groups and Importance of Sharing Wildlife Encounter (Question 11, 12)

Most respondents interviewed were male (60.5%, see Appendix F). The majority of the respondents interviewed were visiting with their families, and most respondents (85.5%) indicated there was someone with them during their wildlife encounter (see Appendix AC).

Just over 86% of the non-Albertans were accompanied by someone, as were 84.1 % of urban Albertans and 76.2% of rural Albertans (see Appendix AC). All young students and park employees were with someone during their visit. Students said that they were with other students, and park employees said that family members or relatives came with them. Slightly higher numbers of rural respondents came on their own than did non-Albertans or urban Albertans. This reflects the fact that the rural respondents surveyed would often pass through EINP on their way home or on their way to work, or else lived adjacent to EINP and could see wildlife from their back door.

A majority of respondents (81.3%) said that it was important to share this wildlife encounter with someone else (see Appendix T). From the joy of seeing a small child react to a bison sighting, to the response of visitors (from England) seeing a moose for the first time, the importance of "sharing" was highlighted during the survey.

Some non-Albertans' responses about the importance of sharing the wildlife encounter included such statements as, "My husband is from Spain; there are no bison in Spain and few wildlife;" or "I want to share my excitement with my children." Some urban Albertans expressed the importance of "sharing with . . . family" and "being with someone who is experiencing a wildlife encounter for the first time." Rural visitors individually explained, "I like to go back home and tell the people what I saw;" or "I always bring visitors." One park employee said that it was very important to share this wildlife encounter with her granddaughter. A teacher indicated that children like to share a wildlife encounter because "kids reinforce each other; they call to each other." The University of Alberta student focus group added that, sometimes, people can enhance the wildlife encounter and that, at other times, sharing the wildlife encounter with other people can diminish the experience.

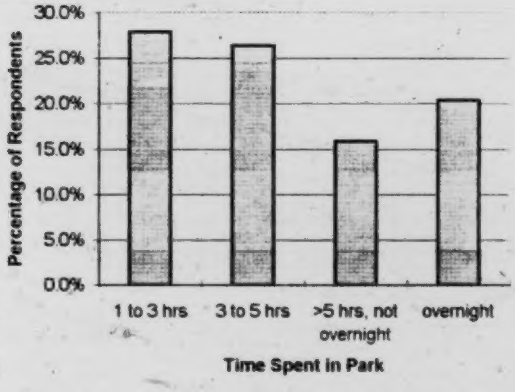
Another focus group of environmental education specialists stated that a child's wildlife encounter was enhanced when sharing that encounter with adults. The education specialists added comments such as, "The adult is the bridge; the adult opens up the bridge;" "Kids brought families back afterwards to see how much they had learned; kids get families to come back;" and "Sharing: kids love to share. Interpreters and teachers focus the experience for the kid."

Respondents' Time Spent in EINP

The majority of visitors sampled were day users (81.4 %) rather than overnight users (18.6 %, see Figure 7 and Appendix G). Day-use visitor percentages were higher for urban Albertans (80.0% day users, 20% overnight users) than for non-Albertans (66.7% day users, 33.3% overnight users). Edmonton is only 45 minutes from EINP, and has a great deal of accommodation available there; there is no great need to stay in EINP overnight. Also, the only accommodation available in EINP is a campground. Only 10.7% of rural users surveyed were overnight users, but this is not surprising, considering that most rural visitors surveyed lived within an hour or less of EINP. As expected, all school children and all park employees who were interviewed were day users; some park employees who were interviewed did live in EINP. Most respondents, (59.9%) spent between 1 and 5 hours in EINP. A further 17.6% spent more than 5 hours but did not stay overnight there (see Appendix I).

Only 22.5% of all respondents stayed overnight in EINP. Given that the origin of visitors was mostly the greater Edmonton area, this breakdown of time spent in EINP is not surprising. The survey's length-of-stay results from respondents are consistent with those from other visitor surveys completed in EINP, including the Criterion Survey (Criterion Research Corporation, 1991).

Figure 7. Time spent in EINP.



Urban Albertans

Of urban Albertans, 22.6% stayed overnight in EINP; 10.7% spent more than 5 hours, without staying overnight; 29.8% spent between 3 and 5 hours in EINP; and 36.9% were in EINP for 1 to 3 hours (see Appendix I). The vast majority of urban visitors (66.7%) spent between 1 and 5 hours within the park. Urban visitors comprise the largest visitor group in EINP.

Rural Albertans

About 17.9% of rural visitors stayed overnight in EINP; 10.7% spent more than 5 hours, but did not stay overnight in EINP; 25% spent between 3 and 5 hours; and 46.4% spent 1 to 3 hours in EINP (see Appendix I). This breakdown is not surprising, because many of the rural visitors interviewed lived within one hour of EINP and used it for sightseeing day-trips.

Non-Albertans

Overnight visitors to EINP represented 40.5% of non-Albertan respondents; 19% spent more than 5 hours; 19% spent between 3 and 5 hours; and 21.4% spent 1 to 3 hours in EINP (see Appendix I). As camping is the only overnight accommodation, the large number of non-Albertans staying overnight is significant, with their use of the campground and evening interpretive programs. Also, a higher percentage of non-Albertans (40.5%) stayed overnight in EINP than did urban Albertans (22.6%).

Park Employees

The park employees interviewed included wardens, information attendants and maintenance staff. They spent their working hours in EINP and occasionally brought their relatives, children or both to EINP (see Appendix I). About 75% of those interviewed stayed more than 5 hours, but not overnight, when visiting EINP during their leisure hours; 12.5% spent between 3 and 5 hours in EINP; and 12.5% visited EINP for 1 to 3 hours.

Statistical Analysis

A statistical analysis was produced using Chi square (see Table 2). The goal was to determine if there was any relationship between respondent category (urban Albertan, non-Albertan, rural Albertan, school students and park employees) and various questions in this survey. Chi square tests were run on respondent categories versus questions 1, 2, 3, 4, 8, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20 and 24. A Chi square test was not run on questions 5, 6, 7 and 13, as they were open-ended questions designed to capture the attributes of a wildlife encounter.

As much as possible was done in this survey to approach randomness, including conducting the survey at different times, days, weeks and months; sampling for different visitor groups, e.g., the young, old, single, married, family groups, school children, and, also, at least in the pretest sampling, at most visitor locations in the park.

The hypothesis here is that there are no significant differences between the respondent categories, for example, when asked question 2: "What is your main reason for coming to Elk Island National Park?" Question 1 respondent category versus "How long did you spend in the park?" has a Chi square (significance) P value of .00000. Because the Chi square P value is < .05, it means that there is a relationship. Here the definition of P value = the observed value is the basis for deciding to reject the null hypothesis. We reject the null hypothesis and conclude that there is a relationship.

Table 2. Chi Square Analyses for EINP Respondent Category (Variable 6, Respondent Category, vs. Other Variables) – Question: Is there any relationship between respondent category and various questions in the survey?

Question No.	Chi Square (Significance)	Question No.	Chi Square (Significance)
1	.00000	17	.15829
2	.00000	18	.00914
3	.00015	19	.00000
4	.00099	20	.00282
8	.00054	24 (moose)	.00009
9	.77691	24 (deer)	.00029
10	.00000	24 (coyote)	.00001
11	.06217	24 (oriole)	.03836
12	.25990	24 (grebe)	.02210
14	.00000	24 (chickadee)	.00611
15	.00002	24 (rose)	.02205
16	.00000	24 (butterfly)	.02678

Question 2 respondent category versus “What is your main reason for coming to Elk Island National Park?” has a Chi square (significance) P value of .00000. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. Even if there is a relationship, it does not say anything about the differences between the categories and how strong the relationship might be. People are coming to the park to view wildlife regardless of where they are from.

Question 3 respondent category versus "What is the most important reason for the existence of Elk Island National Park?" has a Chi square (significance) P value of .00015. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. Most people, regardless of category, want to see an emphasis on ecological concerns in EINP as opposed to recreational concerns.

Question 4 respondent category versus "Is to view wildlife the major reason you came to Elk Island National Park?" has a Chi square (significance) P value of .00099. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. Most people regardless of category come to the park to see wildlife. Knowing where people come from is not helpful in determining what people come to see because everyone is coming to see wildlife.

Questions 5 "What is the most memorable wildlife encounter you have had in the park?" 6 "Why was this encounter with wildlife so important?" and 7 "How do you define a memorable wildlife encounter?" were open-ended questions; hence, no statistical tests were run on these questions.

Question 8 respondent category versus "What is your favorite wildlife species in the park?" has a Chi square (significance) P value of .00054. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. Virtually, every visitor comes to the park to see bison, despite the fact there are over 30 different kinds of native mammals, over 200 different species of birds and over 600 different species of native plants.

Question 9 respondent category versus "Have you made special trips to the park to see wildlife?" has a Chi square (significance) P value of .77691. In this test, the Chi square is highly significant. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. This confirmed that viewing wildlife is a powerful motivation for visiting EINP and possibly other national parks.

Question 10 respondent category versus "How important was it for you to meet wildlife while in EINP?" has a Chi square (significance) P value of .00000. In this test (question 10), the Chi square is highly significant. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. Virtually all respondents, regardless of origin, felt that it was important to meet wildlife in the park.

Question 11 respondent category versus "Was anyone with you during your wildlife encounter?" has a Chi square (significance) P value of .06217. Because the Chi square P value is > .05, we cannot reject the null hypothesis. Most respondents said someone was with them during their visit to EINP.

Question 12 respondent category versus "How important is it that you share this wildlife encounter with someone?" has a Chi square (significance) P value of.25990. In question 12, because the Chi square P value is > .05, we accept the null hypothesis. There is little variation in response between categories of visitors; the majority of visitors said that, yes, they want to share the encounter with someone else.

Like questions 5, 6 and 7, question 13 "Was it something the wildlife was doing that made it your most memorable wildlife encounter?" was an open-ended question, therefore, no Chi square or Pearson's r was run.

Question 14 respondent category versus "Where did this . . . wildlife encounter happen?" has a Chi square (significance) P value of .00000. Because the Chi square P value is < .05, it means that there is a relationship. Here the definition of P value = the observed value is the basis for deciding to reject the null hypothesis. We reject the null hypothesis and conclude that there is a relationship. There is no significant difference between urban, non-Albertan, rural Albertan and other categories as to where they have their best wildlife encounter. For most respondents, their most memorable wildlife encounter happened along the Elk Island Parkway.

Question 15 respondent category versus "Did this wildlife encounter happen while you were in the car?" has a Chi square (significance) P value of .00000. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. Most respondent memorable wildlife encounters, regardless of origin of the respondent, happened while they were in their cars.

Question 16 respondent category versus "How many times a year do you come to Elk Island to view wildlife?" has a Chi square (significance) P value of .00000. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. There was found to be some relationship between categories and how many times a year they came to view wildlife.

Question 17 respondent category versus, "Do you have a favorite sound or voice here in the park?" has a Chi square (significance) P value of .15829. Because the Chi square P value is > .05, we cannot reject the null hypothesis and conclude that there is no significant relationship. Most people wanted to hear the sound of a loon.

A similar response occurred in question 18, which confirmed the results of question 17 and asked, "Of different wildlife sounds, what would you most like to hear?"

Question 19 respondent category versus "Do you have a favorite season for wildlife viewing here in the park?" has a Chi square (significance) P value of .00000. This is a highly significant Chi square. Because the Chi square P value is < .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship. (In examining the data on question 19, although non-Albertans preferred the summer, a substantial number of respondents said that they did not care in which season they visited the park.)

Question 24 respondent category versus: "Please identify the following from photos" (knowledge test. This included identifying a female moose, white-tailed deer, coyote, Northern oriole, Red-necked grebe, Black-capped chickadee, Prickly rose and butterfly -- Tiger swallowtail). Because the Chi square P value is less than .05, it means that there is a relationship. We reject the null hypothesis and conclude that there is a relationship for Question 24. (There is some variation for example with the moose. For example, fewer non-Albertans than other categories except students, were able to identify a moose. There were also fewer non-Albertans than students able to identify a coyote.)

Results of the Survey's Statistical Analysis

There were some results to this survey's statistical analysis:

1. Most people, regardless of origin, were found to be similar in their reason for visiting and their relationship to wildlife; that is, most people come to the park to view wildlife.
2. The Chi square analysis indicates little about the strength between the variables, only that there is some relationship.

Frequency of Visits to EINP (Question 16)

Nearly 300,000 individuals visit EINP annually. Some 43.4% of respondents are from Edmonton, 10.4% from areas adjacent to Edmonton (such as Fort Saskatchewan), 23.1% from other parts of Alberta, 7.1% from other parts of Canada and 15.9% from other countries. (Percentage of respondents, above and hereafter, refers to valid respondents, i.e., to all the respondents who gave an answer and excludes those respondents who gave no answer.)

A total of 44.2% of respondents interviewed said that they came to EINP once a year or less, while 12.5% indicated that they came twice a year -- 6.7% three times per year, and 36.7% more than three times per year (see Appendix X). Two groups of respondents dominated: the once-a-year visitors and the three-or-more-times-a-year visitors.

Urban Albertans and Non-Albertans

Most non-Albertans (96.9%) only came to EINP once a year or less (see Appendix X). Among urban Albertans, most of whom were from greater Edmonton, 21.8% came once a year to EINP; 18.2% twice a year; 9.1% three times a year; and 50.9%, more than three times per year. The fact that the largest group of visitors, urban Albertans, came to EINP more than three times a year, has an effect upon the kind of wildlife encounters those repeat visitors experienced. Some of the urban Albertans surveyed visited EINP ten, twenty and even forty times a year. One elderly German couple from east Edmonton had visited EINP 74 times in one year. Some of the frequent visitors experience the more unusual wildlife encounters away from the road, while hiking and participating in other forms of recreational activities. However, frequency is not the only factor that dictates the type of wildlife encounter. Some visitors who came to EINP many times during a year only participated in viewing bison from their car.

Rural Albertans

Rural Albertans showed a pattern of visitation to EINP, similar to urban Albertans. For rural Albertans, 19% visit EINP once a year; 19% twice a year; 9.5% three times a year; but a significant 52.4% came three or more times per year (see Appendix X). Some rural Albertans drove through EINP 60 or more times a year on their way home from work. Other rural Albertans drove along the boundary of EINP on the way to work and saw wildlife. Others bring their relatives / friends / children out for a drive through EINP to view wildlife.

Park Employees

Many park employees consider EINP merely their work site and only visited it after hours when they had relatives or friends who wanted to see it. More than 66% of park employees indicated they came to EINP three or more times per year after hours to show it to relatives or friends (see Appendix X). A total of 16.7% of park employees visited EINP a total of three times after hours, and 16.7% said that they visited EINP only once a year after hours. Many park employees said that they take EINP for granted.

Chapter 4: The Importance of the Environment and Wildlife Viewing to EINP Visitors

The reasons why respondents visited EINP were examined. The importance of the wildlife encounter to the park visitor was considered. Respondents were asked a series of questions, including if they had made that special trip to see wildlife (Question 9), what was the importance of meeting wildlife (Question 10) and what was their favorite season for viewing wildlife (Question 19).

Respondents' Reasons for the Existence of EINP (Question 3)

The majority of respondents (74.7%) reported that the main reason for the existence of EINP was ecological, while only 11.7% said that recreation was the main reason. Both ecological preservation and recreation were stated to be the main reasons by 12.3% of respondents (see Table 3 and Appendix K). Non-Albertans (94.3%), followed by students (83.3%), urban Albertans (70.3%), rural Albertans (66.7%), and park employees (45.5%) listed ecological protection as the main reason. Only 45.5% of park employees, particularly older park employees, felt that preserving ecology is the major reason for EINPs existence.

Non-Albertans, 7.7% of whom were from Europe, had already experienced the overwhelming loss of natural habitat in their own countries and commented on this during the interview. Students are increasingly exposed to educational materials on environmental problems such as habitat destruction; therefore, the majority believed that EINP exists primarily for ecological reasons.

In the urban Albertan group, 14.9% see EINP as primarily for recreation. Most survey respondents feel that EINP exists mainly for ecological protection.

Table 3. Reasons for Existence of EINP (see Appendix K)

Yes Response	Valid %
ecological	74.7
recreational	11.7
both	12.3
other	1.2

Respondents' Reasons for Visiting EINP (Questions 2 and 4)

The majority of respondents (76.3%) listed wildlife viewing as the main reason for coming to EINP (see Appendix L). Respondents also stated that they came to see large animals (57.1%), to birdwatch (6.6%) and to enjoy the scenery and relax (6.1%, see Appendix X).

The frequency of wildlife viewing as the main reason for coming to EINP varied from 91.7% for non-Albertans to 71.4% for park employees and to 55.6% for students (see Appendix L). It is surprising that among rural Albertans, 76.0% come to EINP primarily to see wildlife, even though wildlife is available on their farms, ranches and acreages. What is not available to the rural visitors is a certain kind of wildlife, namely, the bison. It is interesting that only 45.5% of park employees saw ecology as the main reason for EINP, whereas 71.4% of park employees said that wildlife viewing is the major reason for visits to EINP. Park employees explained that, in order for visitors and others to experience wildlife, certain recreational facilities need to be in place, such as the Parkway, trails, washrooms and picnic areas; and to preserve the whole park would mean that there could not be any visitation to EINP.

Special Trips to EINP To See Wildlife

Most visitors (89.7%, see Appendix Q) indicated that they made special trips to EINP to see wildlife. Urban Albertan visitors provided responses like, "Yes, I come to the park to see wildlife 25 times a year" and "I would be disappointed if I came to Elk Island and I did not see wildlife; I come for a drive in the evening to see wildlife." More than 50% of rural Albertan visitors come to EINP in order to show the wildlife, especially the bison, to their relatives.

More than 90% (see Appendix Q) of non-Albertan visitors and 87.9% of urban visitors said that they made special trips to EINP in order to see wildlife. Ninety-five percent of rural Albertan visitors and 88.9% of park employees made special trips to EINP in order to see wildlife, especially the bison. Of the school children interviewed, 88.9% indicated they had made special trips to EINP to see wildlife, either with their class or their parents.

Favorite Season for Viewing Wildlife (Question 19)

Most respondents (38.1%) indicated that summer was their favorite season for viewing wildlife, followed by fall (11.5%), spring (9.7%) and winter (2.7%, see Appendix AA). Among non-Albertans, 56.7% listed summer as their favorite season for viewing wildlife (see Appendix AA). During the summer, EINP receives the greatest number of out-of-province and out-of-country visits. Urban Albertans, although accustomed to the Alberta climate, still described summer as their favorite viewing season (36.4%), followed by fall at 10.9%. A total of 23.5% of rural Albertans mentioned that summer was their favorite season for viewing wildlife. This is a favorite season for relatives and friends to visit EINP. Fall, for 17.6% of rural Albertans, was favored, with the brilliant colors being listed as one of the motivating factors for their visit.

Only 6.7% of non-Albertans listed spring as their favorite season for viewing wildlife (see Appendix AA). Yet, spring was popular with 11.8% of rural repondents, one of whom explained, "In spring, everything is renewed; there are a lot of migrants – something new to see before it gets too hot." Of school groups, 83.3% preferred spring while 16.7% said that they had no preference for one season, or mentioned more than one season. This is a predictable response because school groups generally come to EINP in the spring.

Winter, for urban Albertans, is an even less popular time (1.8%) for viewing wildlife in EINP, despite the fact that winter is often the best time for viewing wildlife there, since there is an absence of tree cover to hide wildlife. An urbanite is more likely to see a moose, Manitoba elk, deer or coyote in the wintertime because they are visible from the park roadways when the leaves are absent from the trees. A large number of urban Albertans, (47.3%), showed no preference for any season, or had more than one favorite. One response from this category was, "I like all seasons, and it is easier to see wildlife in wintertime -- less bugs."

For park employees, the favorite time to view wildlife was either summer (40%) or fall (40%) because "most animals come out in the fall: it is not as hectic then, and the leaves look nice -- changing"; and "in fall, there are no mosquitoes, colors are beautiful and the weather is better."

Participation in Other Activities (Question 20)

Respondents, when asked about any memorable wildlife encounters while participating in other activities, mentioned hiking (57.8%), skiing (3.3%), bicycling (2.2%), golfing (4.4%), boating (5.6%), picnicking (1.1%) and camping (1.1%, see Appendix AB).

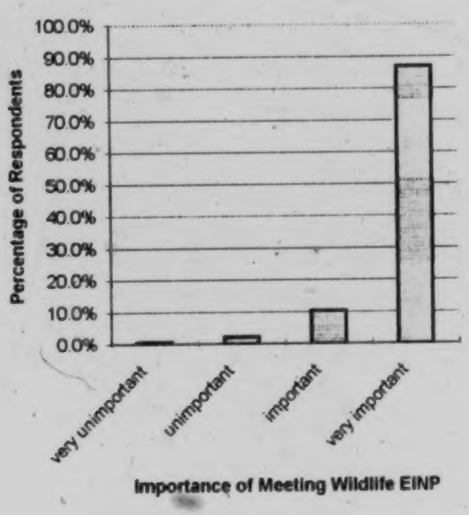
Importance of Meeting Wildlife in EINP

Of those who responded, nearly 90% said that it was important or very important to encounter wildlife while in EINP (see Figure 8 and Appendix AB). Specifically, 77.8% of park employees, 93.9% of non-Albertans and 81.3% of urban Albertans, indicated that it was very important to observe wildlife while in EINP. Non-Albertans were adamant about the importance of wildlife viewing, making such statements as, "I would not come here to Elk Island to see water and trees," and "I would be disappointed if I did not see any wildlife: I would rather see wildlife than mountains." A visitor from El Salvador indicated that because "all the wildlife in El Salvador are gone," it was important to see wildlife at EINP.

Urban Albertans stated, “If I saw nothing, it was a very disappointing trip”; or “You cannot fail [to see wildlife] once you cross the park boundary, as you are surrounded by wildlife.” One urban visitor indicated it was critical to the visit, and another indicated how important it was for relatives to see wildlife. One urbanite indicated that he always sees some wildlife in EINP, from bison to butterflies.

Individual rural Albertans replied, “I always enjoy seeing bison, as I live on a farm. Farmers have a positive association with bison.” For another rural Albertan, it was important for his grandson to see bison. When asked, “Was it important to meet wildlife while in EINP?” the answer was commonly a resounding “Yes,” with over 10% of respondents saying that it was important, and over 80% saying that it was very important.

Figure 8. Importance of meeting wildlife in EINP.



Chapter 5: Visitor Knowledge and Preference for Wildlife Species

The literature shows that knowledge of wildlife enhances the wildlife viewing experience and level of satisfaction. In order to examine the nature of a wildlife encounter and the effect the wildlife encounter has, visitors were asked what their most memorable wildlife encounter was. Questions were also asked about their knowledge of different wildlife species and their favorite wildlife sounds. For most respondents, a memorable wildlife encounter was defined as having an encounter with Plains / Wood bison (see Table 4). The next most popular wildlife species with all respondents was moose (see Table 5 and Appendix P). Other species did not do very well in defining a memorable wildlife encounter.

Table 4. Mammals Most Frequently Described as Part of a Memorable Wildlife Encounter in EINP (From Open-ended Questions 5, 6, 7 and 13)

1. Bison (Plains / Wood)
2. Moose
3. White-tailed deer
4. Coyote
5. Elk (Wapiti)
6. Beaver
7. Porcupine
8. Richardson ground squirrel
9. Muskrat
10. Red tree squirrel
11. Red fox
12. Mink

Variations existed among different groups of respondents. Urban Albertans, who are high repeat visitors, indicated that the coyote and/or the beaver were involved in their favorite wildlife encounter. Rural Albertans generally do not like coyotes or beavers because of the impact the coyotes have on their livestock (poultry, for example) and because of the damage beaver cause by flooding. Non-Albertans, because they are short-stay, often first-time visitors, are not likely to see coyotes or beaver. Coyotes seem to be more visible during the winter months and even so disappear very quickly. The best time to see beaver is early dawn or at dusk when most Non-Albertans are not viewing wildlife.

Table 5. Favorite Wildlife in EINP

Favorite Wildlife	Valid % Yes
bison	56.0
bird	12.0
moose	7.1
Manitoba elk	5.0
beaver	1.4
other animal (non-bird)	8.5

The Common loon (see Table 6) was rated fairly highly by urban Albertans as a memorable wildlife encounter. They are very likely to hear the Common loon's mystic call during their visit to EINP.

It is not surprising that the Plains bison was the most memorable wildlife encounter in EINP, since the bison is the dominant animal in both size and shape. This confirms work done by Kellert (1996) in which he states that most people "tend to direct their attention . . . to large vertebrates and other prominent features of the natural environment [and] other microbial or smaller organisms they are hardly if at all aware of" (p. 13). This study would confirm the finding that the majority of respondents had little awareness of other inhabitants of EINP, including birds even though ducks are clearly visible.

Table 6. Birds Most Frequently Described as Part of a Memorable Wildlife Encounter in EINP (From Open-ended Questions 5, 6, 7 and 13)

1. Common loon
2. Canada goose
3. Robin
4. Black-capped chickadee
5. Black-billed magpie
6. Common crow
7. Mallard
8. Red-necked grebe
9. Red-winged blackbird
10. Blue-winged teal
11. Red-tailed hawk
12. Least flycatcher
13. White-throated sparrow
14. Bluejay
15. Yellow warbler
16. Tundra swan
17. Common snipe
18. Downy woodpecker
19. Sand-hill crane
20. Ruby-crowned kinglet
21. Great grey owl
22. Northern oriole
23. Common yellowthroat
24. Western wood pewee
25. Trumpeter swan
26. Dark eyed junco
27. American bittern
28. American white pelican
29. Bald eagle
30. Barrows golden eye
31. Veery
32. Double-crested cormorant
33. Black–crowned night heron

Bison

The majority of all respondents in all categories (see Table P2) said their most memorable wildlife encounter revolved around bison. This is reasonable, given that bison are the most readily seen wildlife species and are the most dominant. Several wildlife viewing studies, conducted in Colorado, showed that rare or magnificent animals (such as the bison) are vital to many people's wildlife viewing experiences (Wittman, et al., 1997). Leopold (1966) spoke of the central nature of animals in contrast to a landscape without animals that appears static. Given that bison can be aggressive, are almost always available to be viewed, are massive, have a peculiar shape, and visitors can get very close to them in a car, it is no wonder that they are by far the most popular wildlife species in EINP for the majority of visitors.

Moose

Moose was the second most popular species with urban visitors (7.7%, see Table P2) and the most popular with park employees. Rural Albertans indicated that since moose could be seen on their property, they did not define a memorable wildlife encounter in EINP. This evidence supports the significance of the attribute, rarity; if a wildlife species can be seen elsewhere, for example, back home, then it drops considerably in appeal as a memorable wildlife encounter. In a study conducted on interest in specific species for wildlife viewing, moose were one of the top five preferred animals. Smaller wildlife such as muskrat, frogs and prairie dogs were less favored (Standage Accureach Inc., 1990).

Manitoba Elk

Manitoba elk are less popular than moose (see Table P2). Respondents did not see Manitoba elk, or when they did, it was at a distance; or the Manitoba elk immediately ran into the trees upon sighting. Of all the respondent categories, Manitoba elk were most often involved in a "most memorable wildlife encounter" with rural Albertans. This is because rural Albertans frequent EINP at different times of the day. When driving to work through EINP early in the morning, rural Albertans interviewed often would sight Manitoba elk. (This data is from open-ended questions 5, 6, 7 and 13.)

Birds

The data from open-ended questions 5, 6, 7 and 13 showed that few respondents listed birds as being involved in their most memorable wildlife encounter (see Appendix P). Many respondents expressed a desire to experience bird watching but did not have the knowledge. This study found that some people must be able to recognize a large number of species and understand inter-relationships to be able to value encounters with birds.

Some respondents who listed experiences with birds as their most memorable wildlife encounter had a number of different wildlife encounters and were very highly motivated to see a particular bird species. Two respondents, both professors, had driven from Houston, Texas, because they had learned that Trumpeter swans had been reintroduced to EINP. Another respondent, interviewed beside Astotin Lake, was surveying a pair of nesting Red-necked grebes. He had visited EINP specifically to see Red-necked grebes, to tape record their calls and to use a tripod-mounted camera to photograph them. Wittman, et al. (1997) compiled results of ten wildlife viewing studies in Colorado and found that wildlife viewers will sometimes travel great distances to view one rare or magnificent animal. Other respondents went to great trouble to ensure that they sighted or heard their favorite bird species. Some respondents from Fort Saskatchewan, Alberta, had visited EINP at 2 a.m. to listen to Saw-whet owls. Other respondents were canoeing on Astotin Lake at sunset observing Double-crested cormorants coming and going from a rookery on one of the islands.

Visitor Knowledge of EINP Species

As an indicator of the general knowledge base of EINP visitors, a series of color photographs were shown to each respondent during the interview. These included photos of female moose, White-tailed deer, coyote, Northern oriole, Red-necked grebe, Black-capped chickadee, Prickly rose and (Tiger swallowtail) butterfly. Results are presented in Appendix AG (see Table 7). Most respondents were successful in identifying the larger, more common mammals but did not do very well on the birds, the plant or the butterfly. Some non-Albertans related what they saw in the photographs with what they saw in their home countries or provinces.

Table 7. Photo Identification of Species

Photo Identification	% of Correct Responses
Moose	90.1
White-tailed deer	83.5
Coyote	79.3
Prickly rose	36.4
Black-capped chickadee	34.7
Red-necked grebe	33.9
Northern oriole	32.2
(Tiger swallowtail) Butterfly	31.4

Female Moose

The female moose was correctly identified by the majority of urban Albertans (96.5%), rural Albertans (100.0%), non-Albertans (81%), students (70%) and park employees (85.7%, see Appendix AG. Two of EINPs employees were Grade 12 students who were new to the job and had not seen a moose before. (These students were oriented to EINP resources shortly after their identification interview.)

White-tailed Deer

White-tailed deer were correctly identified by fewer non-Albertans (74.2%) than urban Albertans (86.2%, see Appendix AG). This is not surprising given that large numbers of non-Albertans are from other parts of Canada or from foreign countries where White-tailed deer may not be present. For urban Albertans, most of whom reside in Edmonton, White-tailed deer sightings were fairly common in and around the city. Both park employees and rural Albertans had a 100% success rate in identifying White-tailed deer. Some caution is needed in deciphering the identification of White-tailed deer, as sometimes respondents could mistake White-tailed for Mule deer or vice versa. (For the uniformed) it is difficult to distinguish between the two kinds of deer, when the animals are standing still at a distance.)

Coyote

Even lower numbers of non-Albertans (58.1%) were able to identify a coyote compared to urban Albertans (82.8%, see Appendix AG). Students had a higher success rate of identifying a coyote (80.0%) compared to their identification of a White-tailed deer (60%), perhaps because children in the greater Edmonton area learn to identify coyotes through cartoons. Both park employees and rural Albertans had a 100% success rate in identifying coyotes, since sightings of coyotes are common in rural areas and in EINP.

Prickly Rose

The prickly rose is a common plant in greater Edmonton and the surrounding countryside. Therefore, it is not surprising that 41.4% of urban Albertans and 46.7% of rural Albertans were able to identify this plant (see Appendix AG). Among non-Albertans, only 32.3% were able to identify the rose. Students had a lower success rate at 30.0%.

Black-capped Chickadee

Many Urban Albertans (41.4%) and rural Albertans (46.7%) correctly identified the Black-capped chickadee (see Appendix AG). This is hardly surprising, as the Black-capped chickadee is a common year-round resident of Edmonton and the surrounding countryside. Only 29% of non-Albertans correctly identified the Black-capped chickadee.

Two new student park employees were also unable to identify the Black-capped chickadee before they completed EINPs orientation course that spring.

Red-necked Grebe

For the Red-necked grebe, all categories of respondents fared poorly compared to the success rate for the larger mammals (see Appendix AG). Surprisingly, only 46.7% of rural Albertans could correctly identify a Red-necked grebe, even though it is a reasonably common bird on lakes in and around EINP. Many respondents simply identified it as a duck. The number of non-Albertans (35.5%) and urban Albertans (36.2%) who could correctly identify a Red-necked grebe was about the same. This seems to reflect the lower interest that respondents seemed to have in birds compared to that in larger mammals.

Northern Oriole

For all categories of respondents interviewed, the success rate in correctly identifying a Northern oriole dropped drastically (see Appendix AG). The success rate was highest for rural Albertans (46.7%) and urban Albertans (34.5%).

Tiger Swallowtail Butterfly

Urban Albertans (32.8%) fared about the same as non-Albertans (32.3%) in identifying the Tiger swallowtail butterfly (see Appendix AG). Rural Albertans were more successful at 46.7%. Only 20% of students could correctly identify it.

Favorite Wildlife Sounds

Only 45.0% of all respondents indicated that they had a favorite wildlife sound (see Appendix Y). Specifically, only 52.8% of urban Albertans, 41.9% of rural Albertans, 37.7% of non-Albertans, 20% of students and 42.9% of park employees had favorite sounds.

Of all respondents, 58.2% said the Common loon was their favorite sound; the Manitoba elk and coyote each tied as a favorite for only 7.3% of them (see Table 8 and Appendix Z). What this clearly indicates is that most visitors to EINP do not have a favorite wildlife sound, and those who do are most familiar with a more common sound, such as the Common loon, which is sometimes heard on television. Most visitors are unable to differentiate between different bird sounds.

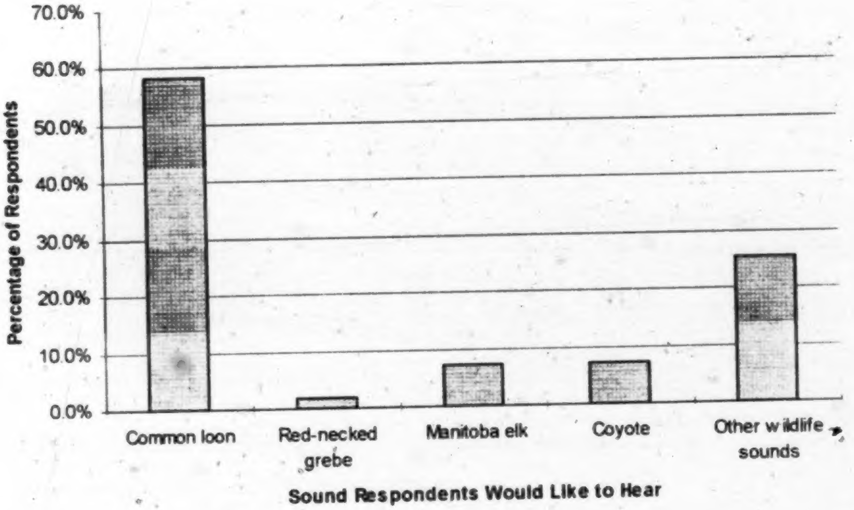
Table 8. Sound Respondent Would Most Like to Hear in EINP

Preferred Wildlife Sounds in EINP	Valid %
Common loon	58.2
Manitoba elk	7.3
Coyote	7.3
Red-necked grebe	1.8
Other: Bison, Elk, American bittern, Chorus frog, Canada goose, Least flycatcher, Trumpeter swan, Black-capped chickadee, Saw-whet owl, White-throated sparrow, Great horned owl, White-tailed deer, Blue-winged teal, Blue jay, Beaver, Sand-hill crane, Red-tailed hawk	25.5

Wildlife Sounds (Questions 17 and 18)

Most respondents (58.2%) indicated the Common loon was the sound they would most like to hear. The Common loon sound seemed the most recognizable to the majority; they had heard the sound on television. To them, the Common loon sound was the call of the wild; it sounded exciting, haunting and eerie. Only 7.3% of those interviewed indicated coyotes and Manitoba elk, respectively, were their favorite sounds (see Figure 9 and Appendix Z). The majority of respondents did not think of wildlife sounds being an integral part of their most memorable wildlife encounter.

Figure 9. Sound most would like to hear in EINP.



Urban Albertans.

When Urban Albertans were asked about favorite wildlife sounds (see Appendix Y), 52.8% said that they had a favorite wildlife sound, and 47.2% said that they did not. Some urban Albertans cited wildlife sounds such as coyotes howling, and others spoke of more complex sounds such as the gurgling noise of a bittern. Urban Albertans indicated that the Common loon was their favorite wildlife sound (70.3%), followed by the Manitoba elk (6.3%) and coyote (6.3%), Red-necked grebe (3.1%) and others (14.1%).

For urban Albertans, the most common response to the Common loon was, "I like the [sound of] Common loons; it is an eerie sound that carries across the lake." Some urban Albertans said the Common loon reminded them of their childhood days. Even for urban Albertans with little knowledge of wilderness, the sound of a Common loon was recognizable. Like the beaver, it is one of the symbols of wild Canada.

Some urbanites indicated that the cry of a Red-tailed hawk, the slap of a beaver's tail, the snort of a White-tailed deer, the bark of a Manitoba elk cow, or the bugle of a Manitoba elk were their favorite sounds. One urban Albertan said, "I really like the sound of a White-throated sparrow because you hear it so much, and it is pretty. I also like the sound of a Northern oriole." Another urbanite's favorite sound was the wind in the aspen trees.

Rural Albertans.

Among rural Albertans, 58.1% said they did not have a favorite wildlife sound in EINP, and only 33.3% of rural respondents listed the Common loon as the wildlife sound that they would most like to hear. One rural visitor listed the Common loon in the evening as his favorite, due to its distinctive, haunting sound. Coyotes were listed by 16.7% of rural respondents as their favorite sound. One rural visitor stated, "Coyotes have the most unique voices, so varied. I like to try to figure out the purpose of their communication." It is notable that more than half of rural respondents said they did not have a favorite wildlife sound, possibly because they are accustomed to such sounds in everyday life and have not thought about valuing one more than another.

Non-Albertans

Among non-Albertans, 37.7% said they had a favorite wildlife sound. Appendix AJ indicates the Common loon was the desired sound for 59.1%, followed by the Manitoba elk (9.1%), the coyote (9.1%) and other sounds (22.7%). Most non-Albertans are unfamiliar with the sounds that various EINP wildlife make so there were a variety of responses from "Yes" or "No" to more elaborate answers such as, "I like [the sound of] Blue jays because there are no Blue jays where I come from in Oregon."

Among North Americans, the Common loon was a popular sound and was described as lonely and haunting, and they gave a variety of reasons for choosing it. Some had heard Common loons in Alaska and, to them, the bird sounded restful. Others felt that the Common loon was rarer than other birds and that its call was different and haunting. To some, it was eerie, magical and romantic or reminded them of nature, water, open spaces and stillness. The Common loon to them was truly wild.

Europeans were less familiar with the sound of the Common loon. An elderly lady from Great Britain, for example, was not familiar with the sound of the Common loon. She was, however, familiar with the sound of the coyote, as she had been staying at a rural Alberta home where she had heard coyotes howling. In describing their favorite wildlife sounds, foreign non-Albertans drew heavily on their experiences at home. To a group of Germans, " a coyote howl is so different; in Germany, you can only see [the coyote] on TV; here you can see it live." To a visitor from Holland, who indicated that 30,000 cars a day pass by his house, no particular wildlife sound was his favorite: "Not hearing the sounds of cars is very important to me."

Park Employees.

Like rural Albertans, 57.1% of park employees said they did not have a favorite wildlife sound in EINP. Park employees' favorite sounds were the Common loon (25%), and the Manitoba elk (25%). Park employees, depending on their level of interest and knowledge in sounds, gave a variety of responses, such as, "I can recognize the Least-flycatcher" and "I like the sounds together."

Fort Saskatchewan Natural History Club and The Friends of Elk Island Society.

Members of the Fort Saskatchewan Natural History Club were asked, "Do you have a favorite wildlife sound or voice here in the park?" As can be expected from a group of advanced wildlife watchers, their responses were diverse. Some of the replies included, "I would most like to hear the bugle of Manitoba elk;" "birds in the evening in the reeds and bulrushes -- the sound resonates;" "Listening to Saw-whet owls at 2:00 in the morning in February and March." These statements contrasted with the responses from less experienced wildlife watchers who tended to focus on the Common loon as their favorite sound. Only one member of the club provided a response to question 18, the sound most desired to be heard: "the bugle of Manitoba elk; I have known the park for years and not realized it is full of Manitoba elk. The sound was unexpected." There were no responses from the members concerning bird sounds.

The Friends of Elk Island Society members did not give nearly as complex an answer to the question, "Do you have a favorite wildlife sound or voice here in the park?" They simply replied, "Loons, coyotes and elk bugling." The Friends' members mentioned that they would most like to hear these sounds because they are associated with real experiences and are the wildest, weirdest sounds.

Front-line Park Staff.

Front-line park staff provided some interesting responses to the question about their favorite wildlife sound. Responses were more varied than those received from either the Fort Saskatchewan Natural History Club or the Friends of Elk Island Society: "I don't hear the bugling Manitoba elk that often;" "[I] never recognized the sound of the White-throated sparrow before this year; it was a learning experience;" "It is a sign of something wrong if there are no sounds; sounds in Elk Island are more peaceful than urban sounds; urban life is so stressful."

Environmental Science Students.

Of all the focus groups interviewed, the University of Alberta environmental science students provided the most complex set of answers to the question, "Do you have a favorite wildlife sound or voice here in the park?" Responses ranged widely: "bugling Manitoba elk;" "bison roaring during the rut;" "bison bugling, roaring and bellowing;" "[the] sound of a baby beaver within its lodge -- heard the baby beaver sneeze;" "sounds of the forest, birds, leaves, anything rustling around;" and "something strange when I hear frogs -- more than a pleasure when I hear frogs; I love frogs" and "I would like to hear wolves at Elk Island."

The University of Alberta environmental science students provided rich and varied responses to the question, "Of the different wildlife sounds, what would you most like to hear?" The statements mirrored the replies to the previous question regarding favorite sounds, with some slight variations: "Bugling elk [is a] sound from another world -- angelic, transports me to heaven, different, so magical." "Bugling elk is haunting, something about being close; the sound penetrates your soul." "I never knew that a beaver sneezed; not too many people hear a beaver sneeze." "I love to sit at a marsh and listen to frogs -- allows me to get away from the sounds I hear everyday; if you are on trails, your mind stays with nature and forgets city sounds." "Sounds of cranes, same quality as Manitoba elk -- cranes sound almost like our Manitoba elk; [the sound is] associated with a species that is so elusive." Although expert wildlife watchers, the Fort Saskatchewan Natural History Club members gave simple responses to this question compared to the responses provided by the university students.

Chapter 6: Attributes of Memorable Wildlife Encounters in EINP

One of the most important aspects of this study was to explore the attributes of a memorable, quality wildlife encounter in EINP, within a spectrum of visitors and park employees. By examining the attributes that resulted from responses to questions 5, 6, 7 and 13, this study describes EINP users' wildlife viewing activities and their perceived relationship to wildlife.

All the responses to this study fell into behavioral, social, environmental and knowledge categories. Behavioral attributes included attributes such as wildlife being close / being close to wildlife, wildlife behaving aggressively, the size / shape of an animal, wildlife exerting control over people, unspecified / fast movement, and maternal-paternal behavior / the preference for seeing young wildlife. Social attributes involved participating with other people in a wildlife encounter and included attributes such as presence of children or other people. Environmental attributes involved the notion that the natural environment added to or detracted from the wildlife viewing experience. It included surprise / uniqueness, availability of wildlife, the importance of solitude and quantity of wildlife. Knowledge attributes included attributes such as the perception that a species is in its natural environment, the feeling that a species of wildlife is less common (rare), or the feeling that an animal is well cared for, the feeling that a species has a historical connection or a belief that the species is endangered (or in the process of becoming extinct. Rare means uncommon, but not necessarily on a worldwide scale; endangered means approaching extinction; well-cared for means that an animal appears to be in good health and not stressed).

In examining the 17 wildlife-viewing attributes, some patterns emerge. Sometimes wildlife viewers would only express the simpler attributes such as aggressive behavior, size / shape and unspecified movement. At other times, other wildlife viewers would progress through the simpler wildlife attributes such as wildlife being close / being close to wildlife and move on to the more complex attributes such as species is endangered. Some attributes are ecological, while other attributes are more concerned with the wildlife encounter, for example, the size / shape of the wildlife species being viewed. As well, these attributes also embrace additional values or people's feelings and beliefs about animals, including the values entitled ecologistic-scientific or those elements of nature that reflect an emphasis on biophysical patterns, functions and structures and that emphasize interdependence among species and natural habitats.

Kellert (1996) postulated that humans have an emotional, physical and intellectual dependence on nature. Kellert also added that, although these tendencies to affiliate with nature are inborn, biological tendencies, they are greatly influenced by learning, experience and culture.

These attributes also support research into values or Kellert's (1997) way of describing people's feelings and beliefs about animals. This reflects the immense pleasure people get from interacting with and discovering nature's complexity as well as the intellectual stimulation, enhanced creativity and physical fitness. In describing a naturalistic experience, Kellert (1996) also adds that one of the many rewards of the naturalistic experience is relaxation and peace of mind.

Respondents listed certain attributes to describe their favorite wildlife encounter in EINP. Valid percentages are calculated from all respondents, combining results from questions 5, 6, 7 and 13 (see Table 9). For most respondents interviewed, a wildlife encounter with Plains bison was the most memorable wildlife encounter they had in EINP. This is not a surprise, as Kellert states that "we evolved with megafauna like bison. We ran with bison and we ate bison" (S. J. Kellert, personal communication, 1997). The attribute, wildlife being close / being close to wildlife, is an example of one of the most important attributes in a memorable wildlife encounter for the majority of respondents. What Kellert (1996) contends is that most people focus on large vertebrates. For all categories of respondents, basic patterns emerge as to why a particular wildlife encounter was so important.

Table 9. Most Memorable Attributes of a Wildlife Encounter in EINP (From Open-ended Questions 5, 6, 7 and 13)

Most Memorable Attributes of a Wildlife Encounter in EINP	n = Number of Respondents Who Mentioned a Particular Attribute				
	Question No.				Valid
	5	6	7	13	%
Behavioral Attributes (behavior conducted by wildlife)					
Wildlife being close / being close to wildlife	34	44	53	14	21.5
Aggressive behavior	32	34	24	0	9.7
Size / shape	16	42	18	6	7.3
Wildlife in control	12	6	0	0	2.2
Unspecified wildlife movement	0	0	6	0	2.4
Maternal-paternal behavior	6	4	8	0	3.3

(table continues)

Social Attributes (with other people / participating in a EINP activity)					
Presence of children enhances wildlife experience	14	18	17	0	6.9
Presence of others enhances wildlife experience	0	10	4	0	1.6
Environmental Attributes (factors caused by the environment)					
Element of surprise / unexpected / unusual / novelty	0	52	86	8	34.9
Availability of species	4	14	6	0	2.4
Experience of stillness / quiet / isolation / solitude	0	2	4	0	1.6
Quantity of wildlife important	0	0	2	0	0.8
Knowledge Attributes (knowledge of wildlife characteristics / ecology)					
Perception that species is free	4	32	52	38	21.1
Rarity of wildlife	6	34	16	4	6.5
Feeling important animal cared for	0	4	0	0	1.5
Feeling species has ties to past	4	12	4	0	1.6
Feeling species endangered	2	2	0	0	0.7

Note. n = number of respondents who gave a particular attribute for questions 5, 6, 7 and 13. Valid % is calculated from questions 6 and 7. The most frequently described attributes, in order of importance were: (a) element of surprise, (b) wildlife being close, (c) species is free, (d) aggressive behavior, and (e) size / shape.

Discussion of Attributes by Respondent and Focus Group

Behavioral Attributes

Wildlife being close / being close to wildlife.

Wildlife being close / being close to wildlife / sense of intimacy with wildlife was important to 21.5% of valid respondents in defining a most memorable wildlife encounter. Overall, respondents described this attribute as extremely important. There is a need to affiliate with wildlife and with nature as a whole (Wilson, 1984). This was expressed when respondents described a oneness with nature that was heightened by being close to the animal. Eye contact with the animal was another important part of being close to the animal.

Many of the visitors interviewed defined their most memorable and important wildlife encounter as being a couple of meters from a bull bison on the side of the roadway and being able to make eye contact with the animal while it fed. Student respondents defined their most memorable encounter as being able to get a few centimeters from a leech that they had captured with a dip net, or they recalled the significance of seeing a muskrat swim by the boardwalk a meter away. Some liked the experience of almost being able to touch a Richardson ground squirrel. Other respondents remembered the fascination of a baby porcupine feeding on salt on the roadside and making eye contact. One park employee recalls looking out the window (at 2:00 a.m.) of the EINP house in which he lodged and seeing a bull bison within inches of the window.

Wildlife being close / being close to wildlife, then, was one of the most important attributes in the wildlife encounter.

Undoubtedly, the bison plays a large factor in making this so important in definitions of memorable wildlife encounters. It is possible to get very close to a bison along the Parkway while in an automobile. This is not possible with most other species of wildlife. Manitoba elk run away from the approach of a car, as do coyotes and many other species of wildlife. How close the viewer gets to wildlife is also dependent, to a certain extent, on the skill level of the viewer.

R. Yang (personal communication, 1997) feels wildlife that are close to the viewer hold more attention than those wildlife that are far away. This study confirms Yang's observation. Wildlife that were close seem to complete the mental and physical bond with the viewer. Especially if viewers could make eye contact with the animal, there was a special harmony built between the wildlife viewer and the animal. Yang added that it was as if the viewer left the human-built world and became one with the animal, bridging thousands of years of evolution where animals were at the centre of human beings' environment. This supports the notion that people still need wildlife, even though technology has dragged them in the opposite direction. People cannot erase their genetic code and the resulting link to wildlife. Ulrich (1983) adds that psychological variables are part of a cognitive process and that the human mind is continually taking in new data and adding it to the existing knowledge base.

Some respondents indicated that they felt "safe" viewing a bull moose that was close to their car. However, the same respondents on foot felt apprehension and looked for avenues of escape such as running behind a tree. Wildlife being close can enhance a wildlife experience by creating a bond between wildlife and viewer, but it can also elicit fear.

Wildlife being close / sense of intimacy with wildlife was especially important for out-of-province respondents, including other Canadians, Americans and overseas visitors and for rural Albertans. Park staff and focus groups like the Friends of Elk Island Society, to a lesser extent, felt that this was important, and the memorable wildlife encounter had to be unusual as well. This attribute was also important to children. (This is elaborated in Chapter 9.)

Some urban Albertans defined a memorable wildlife encounter as being able to get close to a wild animal: "[I define it as] getting close to animals. I held my family back, for safety reasons, until the bison left the road." Other comments about what made their encounter memorable include "getting close to bison;" "just watching them -- the closer the better;" "wildlife being close;" "being able to get close to an animal and to watch it -- a natural setting; it is more natural along the trails, if I walk in and watch it feeding; [trails have] more nature than . . . the Parkway." Some expressed more complete statements: "I love nature and love to see [the animals] so close;" "seeing animals up close is important to me;" and "the intimacy and immediacy in being close to wildlife is important and [so is] how they behave toward you." Urban Albertans especially liked getting close to bison: "I like to be close to bison and observe their behavior." "I like Elk Island because you can get close to bison." One urban Albertan recalls being followed closely down a trail by a young White-tailed deer. Another said, "I like watching beaver; they don't care about us." As one urban Albertan was proud to report, "I had a giant beaver (in the Recreation Area) come within a few feet of me and still [be] unafraid of me."

For many non-Albertans, the best wildlife encounter is being close to a bison on the roadside. Non-Albertans said it is hard to experience this kind of wildlife encounter elsewhere. The importance of a wildlife species allowing itself to be viewed closely manifests itself here: "I saw bison in the paddock 20 meters from the car." "I noticed bison in wildlife being close on the Moss Lake Trail." "My most memorable wildlife encounter was seeing bison up close." "The bison was 12 feet from my truck." A visitor from Hong Kong reported that it was " really great; [the bison] was close; I did not feel threatened." One enjoyed closeness: "[It is] wonderful to see it in its natural habitat." "It is joyful to see a bison so close," said a visitor from England. Visitors in their definitions sometimes precisely measure distances: "[A memorable wildlife encounter means] getting close to an animal, that is, 12 feet from a bison; my grandson got worried that the bison was too close." Wildlife being close was also related to specific, desired species, such as bison or moose: "Being close to a moose [is essential]."

Rural Albertans also said this attribute and a sense of intimacy with wildlife were important. One rural Albertan enjoyed "being able to see the bison up close and to watch their behavior and how they graze." Intimacy of various degrees was referred to, from "[bison] just being on the side of the road when I drive by," to the response, "I am very interested in wildlife behavior and studying what the wildlife are doing; it makes the creatures individuals."

Park staff also mentioned these factors: "[I] could walk up to a . . . moose and almost pet it". Employees said that "moose are magnificent creatures of massive, natural beauty; [there is an] opportunity to see [them] first-hand." They enjoyed "seeing them up close." A member of the Friends of Elk Island Society said, "I saw a beaver on Moss Lake Trail at dusk; I got as close as 15 feet away." However, unlike the encounters of the more casual visitors, these experiences occurred at an unusual time of day or included complicated description: "Working the bison round-up was my most memorable wildlife encounter in the park -- getting a chance to get close and look at a wildlife species. This morning I also saw coyotes and observed their behavior. Also, I saw a young Manitoba elk with antlers."

Aggressive behavior.

"Aggressive behavior of wildlife, animals fighting, threat of personal danger, seeing someone injured" were cited by a total of 9.7% of respondents as being important in their wildlife encounter. When questions 5, 6, 7 and 13 are examined collectively, certain patterns begin to emerge among the most common attributes. For all of these questions (except for question 13), school children, for example, cited aggressive behavior of wildlife / animals fighting / threat of personal danger or seeing someone injured as the most important attribute or characteristic of their wildlife encounter. Two principal wildlife species were associated with this response: the leech, followed by the bison. In question 13, aggressive behavior became important to non-Albertans. For example, one respondent mentioned how a bull bison charged, forcing the visitor to climb onto the roof of the motorhome. Another respondent was bluff-charged by a moose on a trail. One respondent, while riding his bicycle, was charged by a bison. Another visitor photographing on the Parkway walked too close to a moose and her calf and was in danger of being attacked. For some, a herd of bison surrounding a car was seen as being aggressive behavior.

While others did not see the same situation as aggressive, some visitors indicated that some of their most memorable wildlife encounters involved aggressive behavior of wildlife, specifically bison. One visitor indicated that when the bison were aggressive and would not move off the road, he and his relative backtracked, left EINP and re-entered from another entrance to avoid the bison herd that was blocking the road. Similarly, one respondent was bluff-charged by a bison: "The bison was coming toward me on the trail, and he was 20 feet away." Another visitor said, "Bison were thundering by on the Tawayik Lake Trail in Elk Island, and I jumped into the trees to avoid them." Yet another respondent openly admitted, "When I was in Grade 6, playing ball in the field near the campground, a bison went through our tents. Now I have an extreme fear of bison." One other visitor witnessed a tragic encounter: "I saw a guy three years ago get butted by a bison in the Recreation Area. He was drunk and tried to pet the bull bison. He was tossed 15 feet into the air and had to be air-lifted to an Edmonton hospital." Less frightening, but not less violent, one visitor recalled, "I saw bull bison fighting during rutting season in August." Another respondent reminisced, "I remember years ago, on Oster Trail, a herd of buffalo stampeding so that the ground shook." While this attribute can be categorized as animal movement, it also includes affective dimensions in the viewer, such as fear and awe. Among respondents, the highest response rate was given to aggressive behavior of wildlife / animal fighting / threat of personal danger.

Coss (1968) discovered that humans react negatively to large, threatening animals. This is certainly the case, particularly, with male adult bison, which due to their physical dominance and their aggressive nature, are sometimes perceived to be threatening. Considerable data from psychiatry and clinical psychology exists that indicates that the majority of phobic occurrences involve strong fears with respect to situations that have threatened humans throughout evolution such as with snakes or spiders (Costello, 1982; McNally, 1987). Research further suggests that the conditioned physiological defense responses to certain dangerous stimuli are not quickly forgotten, even though the stimuli that cause that conditioned response are subliminal. Humans are biologically prepared to acquire and to not forget fear / avoidance responses to certain natural stimuli and situations that may have presented survival-related risks throughout evolution (Ulrich, 1993). Research has shown that some fears or phobias are familial and partly genetic in origin (Moran & Andrews, 1985; Fyer, et al., 1990).

Duffus and Dearden (1990) add that actual contact with the target species (i.e., a large bison bull) is dominated by a powerful, precognitive, possibly innate or instinctive reaction (p. 221). For eliciting an affective response, Ulrich (1983) describes three elements including a strong and specific focus on the object, gross structure properties that are readily recognized and the element of threat or tension (Duffus & Dearden, 1990, p. 221). One respondent, while viewing a bull bison at a distance of 10 meters focused on the animal to the exclusion of the surrounding forest, described the odd appearance of the bison and felt tension when the bison put its tail up and started moving.

According to Dunham (1977), most psychologists have observed that avoidance response increases in the presence of fear stimuli (e.g., being charged by a bison) and decreases in the presence of “safety” stimuli. Dunham further adds that many people are fearful of flying and “if we make the reasonable assumption that we are not born with a fear of flying . . ., then we must conclude that a phobia for flying in these aircraft [Boeing 747] is learned."

There are, however, psychologists who also feel some fears are hereditary. Whittaker (1970) maintains that emotions often serve as aids in helping us meet emergency situations and that, very often, emotions such as fear or anger are motivational and can lead to goal-directed behavior. He also adds that there is a connection between the intensity of emotion and the effectiveness of action, helping us sustain activity for a longer period than normal. A visitor was once charged by a bull moose. He took evasive action, triggered by an emotion of fear, just in time and hid in a large clump of poplar trees. Fortunately, the moose ran by. Another fellow in a similar situation had to actually climb a tree to get away from a charging moose and spent half an hour in the tree waiting for the moose to leave.

Demasio (1994) theorizes that fears are not necessarily hard-wired at birth. He contends that neither animals nor humans are, of necessity, innately wired for bear fear or eagle fear [or bison fear] although some animals and humans may be wired for spider fear or snake fear. He does contend, however, that human beings are wired to respond with an emotion, in pre-organized fashion when certain features of the world or features in their bodies are perceived alone or in combination. He adds that these features may include size in large animals, a type of motion (in snakes or, in this case, leeches) and certain sounds (growling, for example). Such features would be processed by the brain and would trigger the emotion, fear. In order to cause such a body-response, a person would not have to recognize the bear, snake or eagle to know what is causing the pain. All that is required is that early sensory cortices detect and classify the key features of the animal or the object. Demasio further adds that a chick does not recognize an eagle, but it will hide its head when certain wide objects fly overhead at certain speeds. The emotional response, for example, against a bear, charging, can result in attempts to hide from the predator or to get out of danger by climbing a tree.

Kellert (1996) maintains that one value or way of organizing and describing people's feelings and beliefs about animals and nature is a negativistic value or hostile and negative feelings toward nature including aversion, fear and dislike (pp. 24-25). For example, large predators and snakes provoke avoidance responses and acute passions. Some of these feelings may be survival-related and responses to the avoidance of injury in the ancient human animal. Others also discuss negative feelings. Ulrich (1993) states that even when presented subliminally, nature settings containing snakes (or leeches that look like snakes) can elicit automatic responses, i.e. being feared by children. Fear of certain wild animals such as wolves (or coyotes) can lead to irrational, unjustified behavior toward wolves. In this study, respondents sometimes expressed this attitude toward coyotes in EINP (especially when out walking and coming across a pack of them) and did not see that their benefit, in keeping rodents in check, far outweighed the odd chicken that they might eat.

Frequent visitors to EINP, such as urban and rural Albertans, seemed to feel that some of their most important wildlife encounters involved aggressive behavior, specifically the aggressive behavior of bison. Some of the behavior involved bison attacking automobiles. School children particularly cited aggressive behavior as the most important attribute of their wildlife encounter.

Urban Albertans are the largest group of visitors, make the most repeat visits to EINP and seek out the greatest variety of ways to experience EINP (e.g., hiking, canoeing) and, therefore, are exposed to aggressive behavior by bison more often. Rural Albertans would often refer to how wildlife would not run away. One rancher stated, "Moose on my farm run away when they see me. Here at Elk Island, they look settled in their environment."

The first park staff who meet the visitor are located at either the tollgates or at the Informational Centre. The front-line staff range from those who have many years of experience to first-year university students. Most of the front-line staff provided a range of responses that often reflected comments from the visitors. Most front-line staff said their most memorable wildlife encounter involved aggressive behavior of wildlife. Sometimes staff responses referred to experiences family members had related, i.e. second-hand encounters.

Park employees seemed to think aggressive wildlife behavior made a particular wildlife encounter important: "People did not know whether to pass through the bison herd or not because of fear." The visitors / employees expressed such encounters in their own words: "The greatest wildlife encounter is the bison rut" where animals fight. "I taught my kids to stay away from wild animals because they are dangerous." "While hiking on Tawayik Lake Trail, I encountered a big bull bison. The bull stopped and looked at me. He then started coming down the trail toward me. I went into the trees to avoid him." Another had a similar experience: "I was hiking the Tawayik Lake Trail when I felt the ground shake. I jumped into the bush and a herd of bison thundered by." One park employee described driving slowly along the Administration Road and having a bull bison jump out of the bush and onto the hood of his hidden Toyota pickup truck. A member of one other respondent group, the Friends of Elk Island Society, recalls, "I [experienced aggressive behavior] after ending up in a buffalo herd in the dark; I felt threatened; I was only 45 feet away from the bison."

To define their most memorable wildlife encounter, park staff spoke most about aggressive behavior: "[I] was hiking [when] a bison charged me," recounted one front-line staff member. "The bison ended up only 10 meters from me. . . .The bison came up the hill on the opposite side of me." Another staff member told of an animal fight: "My ex-husband saw a coyote try to take a deer down in Tawayik Lake picnic shelter. The coyote chased the wounded deer into the picnic shelter. My ex scared the coyote away." "Fear [and] respect" of bison lent importance to their wildlife experiences. To a large extent, because Park staff were in EINP each day, their more memorable wildlife encounters involved aggressive or unusual wildlife behavior.

Although non-Albertans considered that aggressive behavior of wildlife was significant, when compared with other visitor categories, they had a lower response rate for this attribute (questions 5, 6, 7 and 13). Most non-Albertans had only visited EINP once or twice in their lives and probably had not had as great an opportunity to see aggressive behavior of wildlife. However, aggressive or threatening animal movements enhanced the experience for some: "I consider this encounter so important because bison are such a formidable beast." "[I have] never seen buffalo fighting before; [I] was within 100 yards of them." "I came within 11 meters of a bison on the Wood Bison Trail. I came over a bridge and the bison was walking toward me." Another said, "I saw two bison fighting." Non-Albertans who responded considered aggressive behavior to include such things as a huge bison bull standing a few meters from their car, bison blocking the road or a bull bison walking down the middle of the road. It is likely that non-Albertans show the highest response to aggressive behavior of wildlife because they are the least familiar with EINP wildlife. For most urban Albertans wildlife viewing is by car: "During [my] most memorable wildlife encounter, I drove around for two hours looking for bison." "I like viewing bison while driving and seeing them on the side of the Parkway."

Size / shape.

A total of 7.3% of those answering the questions said that size and/or shape was an important attribute. Visitors referred to the huge size of the bison as overwhelming, especially when these animals that weigh a ton, were right next to their car. Also, some referred to the shape of a moose and to its long-legged, gangly appearance. Children aged eight to eleven referred to the shape of a leech comparing it to a snake. Very few respondents referred to the shape of birds, perhaps because they could not get close to birds.

As Orians and Heerwagen (1992) indicate, because human beings have lived in environments without modern conveniences, their survival and health depended on how they deciphered the natural environment. Part of this process involved assessing the size of an animal and, then, adjusting their behavioral response. However, Dunham (1977) states that animals have evolved certain response patterns, which are appropriate or relevant in an animal's natural habitat. When exposed to danger, for example, a White-tailed deer has a particular pattern of escape or flight behavior. The same may be said of human beings' recognition of size and/or shape. Perhaps over thousands of years, people have learned to recognize the shape and size of prey species such as moose and bison and the shape of predators, as well.

Also, Whittaker (1970) writes that object or perceptual constancy is learned. Once human beings become familiar with the fact that certain objects possess certain characteristics, then they tend to perceive those objects the same way, regardless of the conditions; this phenomenon is called “object constancy” (p. 273). Whittaker adds that there is shape constancy, too; and that, when human beings know that an object is a certain shape, regardless of the viewing angle, they tend to perceive it in the same shape. The same can be said for color constancy. In other words, once human beings know an object’s true characteristics, they tend to perceive this object the same way, regardless of how it is presented to their senses. One theory of why EINP visitors were so fascinated by the shape of a bison is that many of them may not have been familiar with its shape from previous experience. The large head and huge hump may have been a novel experience to them. One visitor from England remarked, “Bison look like a weight lifter -- heavy in the front end, a different shape to what I am used to.”

In addition, Whittaker (1970) provides insight as to why respondents were attracted to the size of a moose with its long, gangly legs or to the massiveness of a grazing bison standing close to their car (p. 355). “Size,” according to Whittaker, “is another stimuli characteristic that can have a great influence on attention” (p. 229). Human beings determine what to attend to in some cases, but, in other instances, characteristics of the stimuli acting on people’s senses determine their attention. Perception has a focal point or centre of awareness, but, at a given time, a person is only aware of a limited number of these stimuli. Being beside a bull bison would command one's attention. According to several authors, the perceived size of an object depends on its perceived distance (Goldstein, 1996; Kilpatrick & Ittelson, 1953).

This study supports the work of Kellert (1996) who maintains that most people focus on large mammals, and when they are available, large birds. Perhaps this focus on large species is related to security and survival. This study confirms the finding that respondents tend to single out certain species. For example, Park staff and volunteers were rounding up bison in EINP one winter, when a bald eagle flew overhead. While still focusing on bison, they also took notice of the bald eagle and acknowledged its presence. They seemed to exclude everything else from their attention including the background of trees; their attention was on the slowly moving wings of the eagle making its way to feed on a dead bison before their attention drifted back to the bison being herded. The presence of the bison and the eagle seemed to organize the otherwise dull-looking leafless aspen forest. Similarly, during this study, respondents commenting on the size / shape of a bull moose would tell how their walk in the forest was focused and organized as well as how this experience electrified powerful emotions for them.

Size / shape of wildlife was the most important attribute to students, non-Albertans, park employees and to a lesser extent urban Albertans. None of the focus groups mentioned this attribute.

Statements by non-Albertans show an awareness of this attribute: "I see strength in looking at a bull bison; when I see bison rolling in a wallow, I am glad I am in a car." Some non-Albertans referred to the shape of bison as majestic. One non-Albertan claimed, "The size and the shape of the bison impressed me." Others stated, "Shape[s] of bison are important; I studied bison in my history class." "[The] size of the bird impressed me; [I] had not seen one before." "[The] size / shape of the animal is important; also, it is the first time I have seen these animals." A non-Albertan from Hong Kong said, "[Bison] remind me of water buffalo in Vietnam. We are fascinated by the different appearance of bison. My young son said a bison's horns look like needles. The different shape is what makes bison so special."

A park employee felt that an encounter was memorable because of the size / shape of the wildlife: "Being beside a bull makes one realize how big bison are." Another said, "It struck me [as a memorable encounter], being close to an animal of that size." One park staff member also mentioned, "I liked the gangly appearance of the moose; he is ugly but beautiful."

Wildlife in control.

A total of 2.2% of respondents said that wildlife exerting control over people / wildlife in command was important in their wildlife encounter. Most incidents of this attribute refer to bison blocking the road or a bull bison walking down the middle of the road. Statements often related to bison on the road: "Bison were standing in the middle of the road; they were in control." While traffic jams can be annoying in city traffic, these animal encounters were pleasurable, despite the length of the interruption in the drive. For example, a motorist explained, "I was watching a bull bison escort bison calves across the Parkway. It took 20 minutes and held up traffic." Another respondent related, "I ran into a bison jam on the Parkway, and then a moose came out of the bush: [This was] my most memorable wildlife encounter in the park."

There are many variations to tales of path blocking: "When cycling I ran into a bison waiting on the top of a hill. I stopped to talk to interpreters; they said that bison do not like bicycles." One visitor even said, "I like to get close to a bison when it walks across the road." At one time during a most memorable wildlife encounter, animals exerted control while sleeping: "At night, a whole herd of buffalo were sleeping in the middle of the road. Even with the headlights, the buffalo stayed there." Another commented on animals sleeping: "The buffalo were sleeping in the middle of the Parkway."

Kellert (1996) states that wildlife elicit strong emotions and that each experience can evoke a strong emotional response (p.15). This study revealed that when wildlife controlled a situation in which wildlife viewers found themselves, that this situation evoked considerable positive emotional response, including awe for the wildlife. With a bison or herd of bison stopping traffic, it was as if people had momentarily stepped back to their primitive roots to a time when large mammals were at the centre of human existence. Humans' search for new experiences is never-ending. When wildlife blocks the path on a trail or on a road, for a moment, it controls human beings, as animals did in people's past. Once again, animals bridge the gap with people, and they become a central part of human existence, as they were in the past when people were hunters and gatherers. People feel that connectiveness with wildlife and become one with them.

As frequent repeat visitors, large numbers of urban Albertans have experienced behavior like bison blocking the Parkway or wildlife blocking a trail. Referring to a bull bison standing in the middle of the road holding up traffic, one urban Albertan recollected, "The animal has the control." Park employees also experienced "wildlife in control." Other categories did not mention this attribute. Non-Albertans, as infrequent visitors, probably did not experience wildlife in control.

Urban Albertans who were interviewed encountered wildlife in control behavior from bison being in close / being close to wildlife and from bison in threatening situations. Members of urban visitor groups or families mentioned threatening experiences: "We were walking the Tawayik Lake Trail, and we were suddenly blocked by a bison;" "we passed a bison on the Shoreline Trail; as a result, we turned back on the trail and did not pass the bison." A cyclist told of another frightening event: "When riding a bicycle near the west gate of the park, a bison snorted at me. I turned my bike around and went out the gate." "We were walking on the trail," reported one urban Albertan; "we went around the bull bison, but he still charged me and broke trees for 30 feet before stopping." Another said, "I was concerned about my family because I had read about the danger of getting too close to bison." Similar answers expressing fear or danger include the following: "I was face to face with a bison; the bison was only 20 feet from my bicycle;" "the bison took after me while I was riding my bike;" "I still fear bison;" "I was scared [of the bison];" "the bison bulls were fighting by Oster Campground by the warden's house;" and "being afraid" made the experience memorable. These responses are also related to the experience of wildlife in control.

When asked to define their most memorable wildlife encounter and how it was important, some rural Albertans spoke of wildlife exerting control over people. One respondent said, "The whole herd [of bison] was coming behind us in the ditch across the road." Another said, "The bison were on the road; [we] had a team of horses; [we] chased a cow bison off the road with a stick."

One aspect of the most memorable wildlife encounters for park employees was wildlife exerting control over people. This attribute was sometimes combined with aggressive behavior: "When you run into a herd of bison blocking the road, unless you know what to expect, you can be afraid." Another said, "I was driving to work and the bison herd was sleeping in the middle of the road and would not move."

Unspecified wildlife movement / fast movement.

A total of 2.4% of respondents felt that unspecified / fast movement is important. This attribute was observed mainly in children, grade 7 or younger; unspecified animal movement / fast movement was not mentioned by adults.

Goldstein (1996) adds that movement provides people with information to help us segregate a moving figure from still ground. According to Gibson (1979), as long as an animal remains still, it is camouflaged, but it becomes instantly visible as soon as it moves (p. 288). The reason that respondents were attracted to fast movements supports Goldstein's study of movement. A sudden movement by a Manitoba elk as it flees into the forest may attract attention. According to Goldstein (1996), the perception of movement is strongly associated with survival. Thus, he adds that all animals have the ability to perceive motion. Prey that can detect movement of potential predators are more likely to survive (p 287). Goldstein also adds, "Movement helps us to create structure from motion, and helps us to find our way through the environment" (p. 332). Gibson (1979) postulates that movement perception can be explained by the relationships between objects in the environment and the background.

Of all the categories surveyed, unspecified fast movement of wildlife is the most important for students who were 12 years old and younger. Park employees, non-Albertans and focus groups only briefly mentioned this attribute. Urban Albertans did not feel that unspecified fast movement was important.

Park staff spoke about unspecified fast movement in defining their most memorable wildlife encounter. "A bison . . . was running up a hill; the earth was moving," recounted one staff member. Another staff member related seeing two young elk lying in a meadow and surprising them. "The bull elk were caught sleeping, reared up and galloped into the woods, disappearing in seconds." One other staff member recalled, "I followed a porcupine for some distance." One park employee indicated that animal movement, such as unspecified wildlife movement, or fast movement, was part of his memorable wildlife encounter: "Moose is my favorite animal. It is gangly-looking but when it moves, it looks graceful like a powerboat -- very fluid." Similarly, another employee reported, "To me, it is important to see a moose in motion."

Only a few non-Albertans focused on "movement" as part of their most memorable wildlife encounter. One stated, "I like watching the rapid movement of gophers, [Richardson ground squirrels]."

Many of the Friends of Elk Island Society said that their most memorable wildlife encounter concerned animal movements. One member recalled, "While in the middle of the herd picking up scat, a bull started roaring like a lion and started to move. I feared for my life. I was looking for trees." Another admitted, "I never go on trails. I am afraid of bison because I do not know what to do. When you get too close to them, their eyes bug out of their heads."

Some individuals have referred to wildlife adding vitality to an otherwise static landscape. Rolston referred to wildlife as spontaneity in motion (1986). Thus, the attribute, unspecified fast movement, could make a wildlife encounter memorable. Others have associated movement in wildlife with reduction of stress. Katcher and Beck (1983) demonstrated that watching fish in an aquarium resulted in significant decreases in blood pressure. This lowering of stress could help a wildlife encounter to be considered the most memorable one.

Maternal - paternal behavior.

The attribute of maternal-paternal behavior / preference for young / seeing young being born was described by 3.3% of all respondents as being important in their wildlife encounter. This response was most often associated with respondents enjoying the sight of newborn bison calves, moose calves or both; bison calves were one of the favorite wildlife species that was viewed.

The preference for seeing maternal-paternal behavior, or both, speaks of what Wilson (1984) terms the desire to associate with other forms of life and with people's tendency to focus on life and life-like processes. Human beings are a biological species; hence they need to connect with other life forms that produce their offspring in the manner in which they do. Support for the notion that the human species is emotionally and physiologically tied to the natural world and its processes, like maternal and paternal behavior, is steadily increasing (Kellert, 1996).

Some respondents indicated that they focused on maternal-paternal behavior / seeing young born because it was good to see an almost extinct species like the Plains bison repopulating itself. Also, the behavior and size / shape of the new reddish-colored calves with their rapid, unpredictable movements as they bounced around was exciting to watch as opposed to the adult cows that stood still or moved slowly. The whole sense of kinship with these animals through the mothers and their young was formed: a sense of newness of life.

Other respondents focused on paternal behavior, particularly the breeding behavior of bull bison during the July and August rut which was the aggressive behavior (fighting) that is a part of the breeding ritual. Some people liked to witness this behavior from the safety of their cars while others preferred to avoid the bison rut entirely. Some wildlife watchers liked to come to EINP in the fall when the bull Manitoba elk, as part of their breeding behavior, were bugling. Rural Albertans and park employees indicated a strong preference for the attribute, the maternal-paternal behavior / preference for seeing young born. Some rural respondents' preferences may be related to their farming backgrounds: "I remember the birth of a baby Manitoba elk." One employee's experience involved "seeing a cow bison calving, just a ways down the road from a domestic cow."

Some urban Albertans mentioned maternal-paternal behavior, preference for young and seeing young born. This dimension is seen in comments, such as, "Young bison bulls were starting to run and play;" "[The] bull seemed to care for the calves and was protective;" "The cow and calf moose were lying on their side[s] near the trail and the calf looked very young;" and "The bull bison was escorting calves across the Parkway, showing he cared for them."

When defining their most memorable wildlife encounter in EINP, the university student focus group discussed maternal-paternal behavior and preference for seeing young being born. "One day I was canoeing on Astotin Lake," said one student, "and there were a lot of baby grebes on the lake. The baby grebes were hatching. One grebelet hatched and imprinted on the canoe and then followed the canoe. I did not want to pick the grebelet up, but I did so and put it back on its nest."

School children liked to see young animals, and more often than not it was the girls who preferred seeing the young. One eight-year-old girl mentioned, "I liked the beaver because they are cute and cuddly."

Social Attributes

Presence of children enhances wildlife experience.

A total of 6.9% of respondents felt the presence of children was important in defining their most memorable wildlife encounter and in describing what the wildlife was doing. Once their children or grandchildren had grown up or moved away, these respondents no longer, or less frequently, visited EINP. Often the wildlife encounter would be colored by how the child reacted. For example, a radio technician from Edmonton actively described how his three-year-old boy wanted to ride the bison bull: "Bison are so big; my boy wanted to ride a bison."

The presence of children enhancing the wildlife experience was more important in defining a memorable wildlife encounter than was the presence of others (not including children). Some respondents defined their wildlife encounter through the eyes of their children and became involved with the reactions of the children as they saw a bison up close or a Manitoba elk running into the woods.

As Kellert (1993) mentions, the human is a social species dependent on extensive cooperative and affiliational ties -- hence, the reason for the desire to show children wildlife. Kellert also adds that the human inclination to affiliate with life and life-like processes (including wildlife) is part of man's evolutionary heritage. In this study, the adult wildlife viewing experience was often seen through the eyes of the children, and children's comments enhanced the wildlife experience for the adults. However, young children usually only saw the wildlife encounter in terms of behavioral attributes such as aggressive behavior, size / shape and wildlife being close. Children also were the major motivating reason for parents participating in a wildlife viewing experience.

Csikszentmihalyi (1990) states that no long-lived mammalian species could have survived without some built-in mechanism that makes the young dependent on the old and the old feel responsible for their young (p. 177). Throughout history, people have spent their entire lives in kinship groups, and everywhere individuals feel a special intimacy toward relatives. Perhaps the strong drive of parents to bring children to see wildlife is, partly, to connect with thousands of years of evolution where parents taught children how to avoid the dangers of predators and to identify animals that were prey. Parents also enjoyed "reliving" the wildlife viewing experience through the eyes of their children. Shepard (1993) adds that people's intelligence, including that of children as human beings, is tied to the presence of animals, and that animals are the means by which cognition takes its first shape; also, animals are used in the growth and development of a person (p. 18).

Children interviewed during these studies expressed a deep sense of kinship and emotion in seeing wildlife, whether it was a coyote, moose or Richardson ground squirrel. There was a deep sense of longing, almost to be one of the animals. One eight-year-old boy wanted to grab a muskrat as it swam by within a meter of the boardwalk.

This attribute -- the presence of children enhances the wildlife experience -- was most important for urban Albertans, rural Albertans, park employees and, to a lesser extent, non-Albertans. Among the focus groups, although the respondents may have seen the wildlife encounter through the eyes of the children, the presence of children did not seem to be important in the wildlife encounter.

Urban Albertans recounted, "I came to the park so a young boy could see bison; the most memorable wildlife encounter I had in the park was so my six-year-old kid could see bison; he is learning about bison at the day care at the University of Alberta." Urban Albertans tend to visit the park as family groups with children. Often urban Albertans would enjoy the wildlife encounter more because their child reacted to the wildlife encounter in a positive manner. Part of the pleasure came from a feeling of family unity, or the joy of seeing a relative excited or interested in wildlife: "[It is] important to him for his relatives to see bison."

When "seeing a moose" said one visitor, "the whole family is into the wildlife viewing experience including the boys (eight years old and twelve years old) and the girl, (twelve years old). The children liked the moose more than the bison." Among urban Albertans, the expression "seeing the wildlife through the children's eyes" was a common occurrence. Another defined his most memorable wildlife encounter as "something the kids like to see [bison]; seeing the bison through the kids' eyes." The children themselves defined the experience for the adults: "The kid defined what a memorable wildlife encounter was. I saw the wildlife encounter through my kids' eyes."

Rural Albertans also noted that the presence of children enhances the wildlife experience. Rural Albertans often saw wildlife through their children or grandchildren's eyes. Rural Albertans, although frequent visitors to EINP, would generally bring relatives. A memorable encounter included, "just seeing the wildlife through my granddaughter's eyes; my granddaughter said that bison look so big." Another remarked, "My [8 year old] kid had an encounter with a bison in the bush. The kid went to the bathroom in the bush, and the bison was standing 5 to 10 feet away. The bison, fortunately, did not move."

Employees like to bring their children, grandchildren or both to EINP outside of work hours. A park employee said, "Because of the positive reaction of my granddaughter, I love bison; but I am afraid of them." One staff member noted "My kids like to see bison calves." "My grandchild loves the bison," retells another; "she was 18 months old and thought the bison looked so big. She asked if she could get out of the car. She was scared." But one employee admitted, "I do not come out to the park anymore. I used to come out here and picnic when the kids were young."

Non-Albertans related how the presence of children enhanced the wildlife experience. "I came to Elk Island on my way from Ontario with my 12-year-old grandson who wanted to see bison." "The most memorable wildlife encounter my nine-year-old boy had in EINP was with leeches; he was fascinated by leech movements." Other responses included, "From a parent's perspective, [it is] nice to see the thrill of the kids;" and "Our six-year-old girl and our eight-year-old boy talked about the bison with their friends for weeks: they [had seen] a big bison and it was nearby."

This desire to participate with children in wildlife viewing seems related to human evolutionary roots and people's need to affiliate with wild animals. Often, it was the children who motivated their parents to visit EINP and to see the wildlife. There seemed to be a hereditary bond of the children with wildlife. Wilson (1984) argues that human beings have an innate urge to affiliate with the rest of life and that this affiliation begins in early childhood and develops into cultural and social patterns. This evidence may support the biophilia hypothesis.

Presence of others enhances wildlife experience.

Some respondents (1.6%) were sometimes motivated to come to EINP to show wildlife to relatives, friends or both. They cited the presence of others as a major motivating factor for their visits, but not necessarily the factor that made their wildlife encounter so memorable. Csikszentmihalyi (1990) said, "Humans are biologically programmed to find other people, the most important objects in the world" (p.186). Many of the most intense and memorable experiences in people's lives are a result of family relationships. Others, like friends, reinforce a person's wildlife viewing experience. As Csikszentmihalyi wrote, "We need not change ourselves to be with friends; they reinforce our sense of self instead of trying to transform it (p.194)."

Several studies demonstrate that the quality of an experience improves when there are other people around and that it deteriorates when a person is alone, regardless of whether or not the person chooses to be alone (Larson & Csikszentmihalyi, 1978, pp. 677-693). Similarly, Noelle-Neumann (1984) describes why and how people depend on public opinion for their own beliefs. Often, wildlife viewing with others would involve bringing out-of-town relatives or members of the immediate family to view wildlife. Csikszentmihalyi (1990) says that "for man, family is first, and the most important quality of life depends on how well a person succeeds in making the connection with his or her relatives, enjoyable" (p. 171).

There were a variety of reasons why respondents brought other people, whether relatives or friends, with them. For some, their relatives had expressed a desire to view wildlife. Humans are social animals, and wildlife viewing allows for emotional gratification and expanded kinship. The presence of wildlife is part of the social dialogue that helps to maintain human health (Kellert, 1996). Thus, having others present during a wildlife encounter enhances the encounter, as people share their experiences with others.

Urban Albertans and rural Albertans felt the presence of others (excluding children) enhanced their wildlife viewing experience. Some of the focus groups also mentioned the presence of others as important to their wildlife encounter. Urbanites listed other factors that enhanced their favorite wildlife encounter, including the presence of others, such as family members or foreign friends. Some groups of individuals who were interviewed had brought their relatives from various countries, such as Italy, the Philippines and the United States. These foreign groups stressed how important it was for them to see wildlife that they considered rare: "My definition of a memorable wildlife encounter is seeing the bison through the eyes of other people present, that is, relatives from Italy." "My relative wanted to see bison on the side of the Parkway," said one visitor. "He was frustrated because he did not see any." "To see bison is the reason we came to the park. We know people from Germany who went to the Alberta Provincial

Museum [in Edmonton]. They wanted to see bison. They cancelled their trip to [other attractions in Edmonton] and went to see bison."

The university student focus group also mentioned that the presence of others enhanced the wildlife experience. "My aunt took pictures of me with the frogs." "[I] brought a friend to Elk Island who was from England. She had never seen an elk, coyote or moose. It was a thrill to see her reaction to watching a coyote on the side of the road." "I like being able to share the wildlife with someone from England. I want to make sure we protect these mammals for our grandchildren." The Friends of Elk Island Society focus group also said that the presence of others was a reason why the wildlife encounter was so important; it gave them "family time together."

Environmental Attributes

Environmental attributes included stillness / solitude, quantity of wildlife, the surprise / uniqueness of the most memorable wildlife encounter, and availability of wildlife. Some respondents focusing on quantity of wildlife seemed to speak of human's connection to their ancestral past where quantity of prey or predators may have had some survival value.

Ulrich (1993) discusses how relaxing natural environments are and how research clearly shows that stress reduction of wilderness and natural areas is one of the most important perceived benefits. The surprise and uniqueness speaks for man's never-ending search for the unusual.

Whittaker (1970) also maintains that the unusual or the novel draws attention. For example, seeing a moose sleeping in the middle of a bison herd at dawn would look unusual to the most ardent wildlife watcher. The different appearance of the moose would draw attention. One of the characteristics of the stimuli that affect attention is stimuli change.

Element of surprise / unexpected / unusual / novelty.

Many respondents (34.9%) that gave an answer stated that "the element of surprise / the unexpected / the unusual / the novelty" was a central reason why an encounter with wildlife was memorable to them. It became evident during the interviews that if a wildlife species was commonplace elsewhere, then the wildlife encounter was less significant. Bison are not common; one of the few places to view bison in Canada in a natural setting is EINP where they are common. Iltis (1980) addresses the human characteristic to search for the unusual; humans need natural diversity.

Goldstein (1996) discusses the element of surprise / uniqueness from a psychological perspective. He contends that perception involves two main aspects: characteristics that stimulate the sense organs and characteristics of the perceiver, including past experience, motives, attitudes and personality. He also adds that, at any one time, a person is aware of only a limited number of these stimuli. Perception or attention to a wildlife species has a centre of awareness. While viewing wildlife, people shut out certain stimuli such as the car travelling past them as they are focusing on a baby porcupine feeding on the side of the road, for example.

We perceive things indirectly, based on electrical signals to the brain (Goldstein, 1996, p. 87). Perception is an extremely active process. People actively seek out information in the environment by directing their attention to objects in which they are interested (Goldstein, p. 127). The process of perception is also influenced by one's prior knowledge, e.g., of a porcupine (Goldstein, p. 4). New, unique, novel stimuli (for instance, watching a baby porcupine feeding) not only result in behavioral arousal, but also cause changes in the neural activity of several brain areas (Hernandez-Peon & Scherrer, 1955). However with repeated presentation of such stimuli, neural activity diminishes (Herendez-Peon & Scherrer, 1955; Sharpless & Jasper, 1956, pp. 655-680). For some wildlife viewers, the feeling of surprise can be created, in part, by time of day or season: "My most memorable wildlife encounter was seeing a warbler and the grebes on the lake -- listening to various birds but not being able to find them"; "I watched a moose cross a frozen lake during the wintertime"; "I ran into an elk on one of the islands in wintertime."

Seeing animals in a surprising place also created a feeling of novelty: "A few feet down Hayburger Trail, I ran into coyote pups; I got as close as 50 feet; I waited half an hour for the mother coyote" (see Table 10). Similarly, a visitor felt surprised by seeing a species that was new or rare to him or her: "One of my best exposures to the heron happened at Elk Island National Park – also seeing grebes nesting." Still others were pleasantly surprised when they observed unexpected animal behavior: "My son was by a section of the Elk Island fence, and a deer leapt over the fence and over my son's head"; "[My] most significant encounter was with a porcupine when it put its quills up"; "[I had fun] watching a moose trying to break into the park."

Some wildlife encounters were surprising because of combinations of unexpected situations, animal behavior, or uncommon species: "[I] saw a moose on a trail, and we sang to it. [I also] saw two coyotes attack and kill a beaver on Moss Lake Trail. (The beaver was out of its lodge while there was still ice on the pond.)" "[My favorite encounter was] being out on a trail and watching a coyote chase a deer out of the bush." "[I enjoyed] seeing a porcupine come down a tree at the north end of the Parkway." "Hearing a Bittern [was my most memorable wildlife encounter]." "My most memorable wildlife encounter changes from week to week. On Moss Lake, I saw all five species of ungulates." Such wildlife encounters may involve hiking, bird watching or cross-country skiing.

Table 10. Most Unusual Wildlife Sightings by Respondents in EINP (From Open-ended Questions 5, 6, 7 and 13)

Mammals	Birds	Other
Pygmy shrew	Trumpeter swan	Leech
Coyote pups	Baby Red-necked grebe	Chorus frog
Baby porcupine	Great grey owl	Tiger salamander
Lynx	Sand-hill crane	Moose tick

Interviews indicate that even the definition of surprise or the unusual varies with the type of wildlife viewer. For a first-time visitor, moose standing in the middle of a pond may be unusual. An experienced wildlife viewer may consider a bittern sighting unusual. Other categories of viewers sought after a more unusual wildlife encounter, for example, when repeat respondents experienced a Double-crested cormorant rookery from a canoe.

The attribute of surprise / unexpected / unusual / novelty was more important to repeat visitors and to the focus groups, many of whom visit EINP often. It was less important to non-Albertans probably because they are infrequent or first-time visitors and most tended to concentrate on roadside wildlife encounters.

This attribute of surprise / unexpected / unusualness / novelty was important to urban Albertans. Some focused on unusual situations or behaviors. "My wife was seeing pelicans diving in sequence," said one viewer, and others recounted, "[I was fascinated by] seeing [evidence of] winter ticks on a moose; the moose was missing a lot of hair" "Seeing so many Barrow's goldeneyes; my wife's first encounter with a Great grey owl." Others commented, "My most memorable wildlife encounter was seeing a moose and her calf." Urban Albertans often used the words, "surprise" and "unusual." "A memorable wildlife encounter is one where I am surprised." One explained why such a definition was so common; "[I define it as] a surprise / unusual, because I am a frequent user; [I] like to canoe in the fall; for some users, the more exotic experiences are what they crave." For another person, it was unusual to see both "a coyote and a deer on a trail."

For some urban Albertans, surprise / uniqueness was often associated with other attributes. Seeing young wildlife was also considered unusual: "A memorable wildlife encounter is an unusual experience. I would like to spot young calves, young elk or deer fawns." Even the shape of a bison was felt to be "something different." Surprise was related as well to the time of day or year: "[I felt] surprise, scared, unusual," said one urbanite, when "a deer followed me and my wife a distance to [the] north end of Recreation Area. Animals sense we like them. I saw a dead, collared moose in February by Hayburger Trail with the baby standing nearby. The mother moose had died of winter ticks." Another remarked about moose that "were getting up at dawn with the hind legs first; wildlife gathering in herds / interacting with the same species" was memorable. Another comment mentioned that wildlife "were in the water looking for food."

Non-Albertans also made comments on unusual species: "I am from Sparwood, BC where elk regularly graze on my lawn; in Elk Island, I do not want to see species of wildlife I see back home." "For me, Red-winged blackbirds are unusual because we do not have them back in England." Animal behavior also elicited surprise: "I did not know that bison could swim. I thought he was a rock." Others simply remarked about, "seeing the unusual" or described the joy of searching for an unusual experience: "Part of the fun is looking for wildlife: sort of a challenge;" and "[The] surprise element means a lot; if you see animals, it is a bonus; [it is a] surprise to see an elk." Some non-Albertans sought out the unusual species and behaviors that they had not seen before.

The element of surprise was also involved in park employees' favorite wildlife encounters: "I was looking at a herd of bison on the side of the Parkway sleeping early in the morning," recounted one staff member; "They were close to one another. Suddenly I saw a strange shape in the middle. I looked closer, and it was a moose sleeping in the middle of a bison herd." Another park employee remembers "walking along the north boundary and following [three meters behind] a porcupine."

The attribute surprise / uniqueness, was also important to the focus groups. Approximately 50% of the Fort Saskatchewan Natural History Club and the Friends of Elk Island Society members defined a memorable wildlife encounter in EINP as consisting of affective dimensions such as surprise and novelty. Their response to questions about wildlife encounters were that of advanced wildlife viewers; that is, they sought unusual wildlife encounters. A mere sighting of a buffalo by the road was not likely to be defined as unusual. Seeing a rare bird while hiking or canoeing, however, would be a valuable experience to such viewers: "I like seeing new birds and animals [including Manitoba elk]; the unexpected, the unusual and the novelty encounters were a surprise."

Some encounters by the club and society members occurred at unusual or specific times and seasons, such as "seeing a weasel on Labor Day weekend." Few of these responses would have come from a usual once-a-year daytime visitor who mostly enjoyed viewing bison from an automobile. For one individual, "walking down a trail [where] there was a bison waiting" was a memorable encounter because "it was unexpected." The unusual setting was important to one respondent who enjoyed "listening to Saw-whet owl sounds: The darkness, stars, northern lights during early spring (no snow on the ground during February and March). I used an owl tape." Other emotions were important for a different member: "Watching beaver was so important because I like observing them. I feel patriotic watching beaver."

Unlike the encounters of the more casual visitors, members of these focus groups included complicated descriptions of their wildlife experiences. Other organizational members defined a memorable experience as "seeing a variety of wildlife, such as pelicans, swans and cormorants" or the "unexpected. [You] could not plan for it; [it gives] a sense of adventure. [You] almost always see a bison." Seeing wildlife was, for one viewer, "like a treasure hunt."

Another focus group consisting of university environmental science students described a most memorable wildlife encounter in terms of a sense of surprise /

uniqueness. One student said, "My best wildlife encounter was with a coyote by Oster Lake Campground . . . [that] popped out in front of me, . . .sat down and looked at me from 30 meters away." Of all the visitor categories, members of this group mentioned the most unique and surprising aspects to their most memorable wildlife sighting. An example is "I love frogs. The frogs at Elk Island are wonderful. My most memorable encounter at Elk Island involved chorus frogs on the Amiskwiche Trail. . . hopping all over me." Another detailed response involved a species not normally mentioned: "Alongside the Oster Lake Road, a [Tiger] salamander was moving in the leaves. My partner sketched the salamander. The salamander tried to get into my partner's boots. In the meadow was a bull elk. There were the sounds of bull elk bugling all around us. I watched the bull elk bugling and urinating."

Other answers included the following: "I like seeing all aspects of the park, [including the unusual]." "[I was] walking down a trail and there was a Ruffed grouse waiting." "Elk are unique because they have patches on their rumps and are so alert, natural and quiet." "Hearing yellow warbler sounds [was my best wildlife experience]." [I] spent most of one night in the park moving around, listening to night sounds and adapting my eyes to the available light, like animals using non-visual senses."

Availability of a particular species

Only about 2.4% of respondents who provided an answer said that a particular species had to be available for a memorable wildlife encounter to occur. This result was probably more reflective of the attribute itself than anything else. This attribute was often overlooked, since most respondents assumed that the wildlife had to be available in order for a memorable wildlife encounter to occur.

Although EINP has over 1,000 elk, visitors seldom see the Manitoba elk (due to their shyness). Bison graze on the side of the Parkway and are readily seen by most visitors. Calvino (1983) sums up this attribute of availability of a firsthand encounter with wildlife: "The new knowledge the human race is acquiring does not compensate for the knowledge spread only by direct oral transmission, which, once lost, cannot be regained or retransmitted: no book can teach what can be learned only in childhood if you lend an alert ear and eye to the song and flight of birds and if you can find someone who knows how to give them a specific name (p. 229)."

Other writers address availability of wildlife as it relates to a person's experience. Having bison and other wildlife available allowed visitors to experience what Leopold (1966) referred to as the central aesthetic of animals in the landscape, its focus of meaning in contrast to a seemingly static environment. Rolston (1986) seems to imply that the animal gives its habitat vitality and "spontaneity in motion." Without the animal being available, this cannot happen. Kellert (1996) supports this finding that wildlife hass to be available for a most memorable wildlife encounter to occur. People tend to focus on the available, larger, more colorful, mobile and diurnal species. People did not focus on the nocturnal species because they are not available during the peak hours of wildlife viewing, which, in this case, was between 10:00 a.m. and 3:00 p.m.

People may actually need to see bison and other forms of wildlife. Kellert (1993) asserts that people have strong feelings for particular aspects of nature, and that this focus is usually directed towards the larger vertebrates. The present study supports this view.

Despite numerous other native mammals, birds, and plants, the majority of people interviewed focused on the megafauna. As Iltis (1973) argues, "Human genetic needs for natural pattern, for natural beauty, for natural harmony [are all the results of natural selection over the vistas of evolutionary time]" (p. 51, original brackets).

If pamphlets and television become people's only access to wildlife, then human beings will have lost the very fabric of life. Media, like movies and videos, could become people's only way to see wildlife, and as a result of this exclusively secondhand experience of animals, human beings may become less intelligent, less perceptive and less imaginative. Availability of wildlife species was discussed by urban Albertans. One urban Albertan reasoned, "I have to see an animal for it to be a memorable encounter; [this is] the reason I rate elk so low." "[You] only see bison at Elk Island. Elk you see briefly, then they take off." One visitor preferred bison "because you would have to 'live with a kid' [i.e. deal with a disappointed child] if he did not see a bison." For non-Albertans, availability of a particular species was more important in defining a memorable wildlife encounter than it was for other categories of respondents (see Appendix O). Since they visit EINP only once or twice a year at most.

Park staff mentioned that a good wildlife experience involved seeing "something that is unavailable elsewhere. [You] can go out into the countryside and see moose. [But you] won't run into bison in the countryside. Bison are a big attraction for a large percentage of visitors." In their discussion of a memorable wildlife encounter, employees would refer to visitors' experiences. Park employees are guaranteed to see wildlife, even the more reclusive Manitoba elk.

The availability of a particular species enhanced a wildlife experience for some in the environmental science student focus group; "anticipating seeing something" was important. "If the bison is not there, people are disappointed." Other focus groups did not mention this attribute.

Experience of stillness / quiet / isolation / solitude.

Experiencing stillness / quiet / isolation / solitude in combination with the wildlife encounter was important to only 1.6% of respondents because only a few respondents assumed that their wildlife viewing opportunity was going to include experiencing stillness / quiet / isolation / solitude. There is strong evidence in this study that suggests most respondents did not know how to use EINP in order to experience solitude and isolation. They did not know what opportunities for off-road / away-from-crowds activities existed and were content to view wildlife alongside a road or at some of the popular visitor staging areas.

Mental benefits of outdoor activities include tension release, peace of mind, relaxation and enhanced creativity that come from observing nature. One elderly couple came to EINP many times during the year to experience a combination of peace, quiet, and isolation along with their wildlife encounters. The elderly lady, after wildlife viewing, would lie down beside a trail in EINP in order to gather her thoughts. Such viewers desired a more complex encounter, wanting to escape the hustle and bustle of the city. They would view wildlife in combination with a hike or a ski.

Ulrich, et al. (1991) state that exposure to even unspectacular natural environments (and the wildlife contained therein, providing the wildlife are non-threatening) can promote stress recovery more quickly and more completely than urban environments lacking nature. Further to this, exposure to nature fosters psychological well-being, reduces the stress of urban living, promotes human health, and is part of the justification of preserving wilderness for public use. This may be a major motivating factor behind the lady lying down beside a trail and relaxing.

Urban Albertans and some of the focus groups felt that the experience of stillness / quiet / isolation / solitude was important in defining a most memorable wildlife experience. Other categories did not mention this attribute. Non-Albertans were only in EINP for a short stay and focused mainly on seeing wildlife. Rural Albertans and park employees seemed to take quiet and solitude for granted. Some of the focus groups had responses similar to urban Albertans.

Experiencing stillness / quiet / isolation / solitude in combination with the wildlife encounter was important to a few respondents. Urban Albertans' responses, for instance, reflected the importance of this attitude. Some urban Albertans said that their best wildlife encounter was away from the road in the remote corners of EINP -- on a trail, for example. Their definition of a memorable wildlife encounter involved seeing the wildlife species in an area of EINP that was peaceful, isolated and devoid of human noises. These viewers wanted to escape the hustle and bustle of the city: "You must sit quietly so as not to scare beaver," "Hearing the Common loons and the coyotes is different than hearing sirens," and "The sound of a Common loon is mystic and hypnotic." For other urban Albertans, coming to EINP when it was quiet early in the morning was a situational factor that defined what they considered to be a memorable wildlife encounter, e.g., "getting up in the morning and finding 35 to 40 species."

Non-Albertans liked the quiet and solitude EINP offered, but they defined a memorable wildlife encounter mainly by the wildlife they had seen. The only focus group to mention this attribute was the university environmental student focus group. One student summed up the group's response: "Everyone wishes they could be the only person there."

Importance of quantity of wildlife.

Of all respondents, 0.8% said that the quantity or number of wildlife was an important attribute of their wildlife encounter. A few of the respondents who spoke of numbers were counting bison calves in a herd; one said, "I counted 119 bison on the Parkway." Bird quantities were also mentioned. One couple counted the number of American white pelicans on Astotin Lake; another saw a "Double-crested cormorant colony on an Astotin Lake island." One wildlife watcher, who had been in EINP when there were a large number of Tundra swans on the lake, said that counting them was one of the most memorable wildlife experiences.

In counting numbers of wildlife, respondents said that they were at least partially reassuring themselves that sufficient numbers of certain species still exist. For example, one lady from Chicago remarked, "It was good to see a herd of 100-odd bison cows and calves, when the species almost went extinct 100 years ago." Also, counting wildlife numbers may be a result of human evolutionary development where counting the number of prey was important to people's survival. For others, abundance is a measure of a worthwhile sighting, and counting is a quantitative measure of this, which is more effectively communicated.

In interviewing respondents, people indicated that "some animals such as bison are not meant to be by themselves; they belong in a herd." Other interviewees felt they got a greater sense of being connected to the bison by being able to drive through the middle of a herd. A lone bison, unless it was a huge bull next to a respondent's car, did not elicit the same feeling as a herd of nearby bison. To respondents, some animals and birds naturally belonged together. When respondents did see large flocks of birds and herds of bison, there was a sense of connectedness with these animals and, also, a sense that the wildlife was well cared for. Numbers of wildlife seemed important to some beginner wildlife viewers as well as to some advanced ones. Seeing herds of bison gave a sense that all was well. When respondents found out, that after the banning of power boating, the Red-necked grebes had come back and now numbered some 300, there was a sense that the grebes were being well cared for.

Of all respondents, only a few urban Albertans and one of the Friends of Elk Island Society members said that the number of wildlife was an important attribute of their wildlife encounter (see Appendix O). Bird quantities were also mentioned. A member of the Friends of Elk Island focus group said that the quantity of wildlife was important: "My most memorable wildlife encounter was seeing migrating pelicans at springtime. I saw about 100 to 150 on the water."

Knowledge Attributes

Knowledge of wildlife attributes included species is rare, species is free, species has ties to the past, species is endangered and the animal (wildlife) is cared for. Being able to express knowledge attributes meant that viewers could identify large numbers of common and uncommon species of wildlife and could recognize that species were interconnected. Sometimes knowledge-based attributes were expressed in conjunction with other attributes, for example, environmental and behavioral attributes.

Csikszentmihalyi (1990) says that people develop the concept of whom they are and of what they want to achieve in life in a series of steps (p. 221). His results may give us insight as to how people connect to wildlife viewing. Each person starts with a need to preserve oneself, and next, embraces the values of a community, the family and the neighborhood. A further step involves greater complexity of the self and development of a conscience. The final step involves turning away from self, integrating with other people and merging interests with those of a larger whole (Csikszentmihalyi, p. 222). Disintegrating air quality and extinction of species point to the fact that human beings must have sustainable development that is integrated with the preservation of ecosystems. It is suggested that certain wildlife viewers are able to recognize the value of an endangered species as part of an interdependent whole.

The view of moving to increased levels of specialization in wildlife viewing is supported by Bryan's Leisure Specialization Continuum (Bryan 1977, 1979, 1980). Bryan suggests that a wildlife-oriented recreationist may begin showing interest in wildlife by visiting zoos, gradually changing to outdoor activities with some wildlife viewing component, such as to specific trips to view wildlife in local areas and to view specific species (Duffus & Dearden, 1990, p. 223).

People who have the larger interests of the environment, and mankind in general, at heart recognize knowledge attributes. Normally this does not include the average person who does not tend to look at tiny organisms or obscure invertebrates. Kellert

(1996) describes the person who has knowledge of wildlife as having an ecologistic-scientific value as a person, having more of an integrated or ecological approach to the natural world with an emphasis on interdependence among species and natural habitats. In the scientific approach, people stress structures and processes below the level of the whole organism. This study supports Kellert's work and contends that most people focus on the behavioral, social and the environmental attributes of wildlife encounters. This research also supports the idea that most people, when viewing natural environments, ignore almost all except the large mammals and other prominent features in the environment and do not focus on small and obscure creatures.

Most people during their most memorable wildlife encounter ignored the natural environment surrounding them, including the birds singing in the trees and instead focused on the megafauna that was available at the time, whether bison or Manitoba elk. According to this study, most respondents clearly did not embrace the knowledge attributes.

Species is free or in its natural environment.

Among all who responded, 21.1% appreciated the freedom of the species, or that the species was in its natural environment. As the fence surrounding EINP is not visible from wildlife-viewing areas, none of the respondents interviewed mentioned the fence, although some may have known of its existence. The fence is used to control bison, which in the past migrated over hundreds of miles and are now unable to do so because of the damage they can inflict on farm and pastureland surrounding EINP. While the fence does control elk, moose and deer to a certain extent, there is a substantial moose and deer population surrounding the park. The fence does not confine other native mammals, birds and plants. Many of the respondents who were from heavily populated areas of Europe, the USA and Canada felt that it was important that the species being viewed is free and not in a game farm or a zoo. This finding supports a study in Colorado that asked respondents the importance of wildlife viewing opportunities when planning a trip to view wildlife (Manfredo, Bright & Stevenson, 1991).

What really became evident through the interviews is that, to some respondents, there is a notable difference between seeing a bison in a natural environment as opposed to seeing the bison in a corral or a pasture. The attribute "the species is free" was important for rural Albertans (25% in question 6 — the largest response). Similarly, Europeans and Americans from large urban centres often said they hated seeing wildlife in zoos, where the animals seemed lifeless. Europeans pointed out the lack of wildlands in Europe and the resulting perception that European wildlife was not free. One elderly man from England told of the construction of a freeway through a natural area and the deer that were being killed on the new freeway as a result.

This importance of a species being free is captured by Shepard (1993): "The development of the person's sense of his own structure may depend upon the beauty, strangeness and diversity of a wild fauna, assimilated ceremonially as food and perceptually as the plural assembly of the self (p. 282)." In addition, Ulrich (1993) found that human beings preferred a natural design and natural patterns. Perhaps this is why respondents said they preferred seeing an animal in a natural setting, free to roam and feed at will. He adds that even unspectacular natural views elicit a higher aesthetic preference.

Each category of respondents seemed to have its own assumptions or biases regarding the freedom of the species, natural environment of the species or both that they were watching. Species is free or in its natural environment was the most important attribute to rural Albertans and to non-Albertans. Non-Albertans had a dislike for zoos and game farms. It is less important to urban Albertans and to students who still think of Canada as having vast wilderness areas. Many urban Albertans who responded felt that there was still plenty of wildlife roaming freely in North America. Their knowledge that deer and moose roam freely outside EINP contributed to this feeling.

Rural Albertans, including a bison rancher, said that the bison look happier in the freedom and natural setting of EINP as opposed to in a pasture. Another rural Albertan noted that Manitoba elk in EINP seemed happier and more relaxed than elk on a game farm. When asked what the wildlife was doing that made an encounter his favorite, a rancher replied, "Just being free." Additional responses involved the perception that the species is free or in its own natural environment: EINP is "such a wonderful opportunity to see wildlife in their own habitat;" and "[It is] different from watching bison on a farm. It is interesting to compare them in their natural setting, not to just see them sitting on the same pasture all the time." According to one rural Albertan, observing animals in their own habitat "makes you feel that you are part of the world around you, another human being in the ecosystem, an individual interacting with one's surroundings."

For these people, the natural environment was part of the experience. The perception is that the setting allows animal behavior to be more natural and less controlled or predictable: "My friend near Rocky Mountain House raises bison, but it's not the same as seeing them in Elk Island; here in the park they're not captive; they are wild and unpredictable;" and "[There are] not too many places where you can see grebes in the natural habitat; [I] came to Elk Island to see five different kinds of grebes." Other comments were "solitude, smells; knowing the animals are there;" and "beaver watching." Visitors also said, "[I] like to see an animal in its natural setting," or they gave more picturesque descriptions, such as "It was a beautiful time of year. Elk Island is very wild. You look out and all you see is bush. There were a lot of swans close to the Administration Road."

The notion that the species is free and not in a game farm or zoo is also very important to non-Albertans. What really became evident through the interviews was that there is a notable difference between seeing an animal in its natural environment as opposed to seeing the animal in a corral, a pasture or a zoo. One lady from Chicago said she hated zoos and liked to see a wild animal roaming in its semi-wild, natural environment. She added that she does not like going to zoos "where the tiger walks up and down." A significant number of non-Albertans came from highly urbanized environments in Canada and other parts of the world. The diminishing state of wildlands with their accompanying wildlife was prominent in their minds. The Europeans especially felt an important part of defining a memorable wildlife encounter was seeing the wildlife free in their natural habitat. One 45-year-old man from Holland indicated that Holland had no parks the size of EINP and that the only wildlife left in that country was foxes and rabbits. Europeans realize how important natural parks are because their country has so little open natural space and wildlife left.

A small number of urban Albertans (6.3 %) mentioned the feeling that the species is free or in its natural environment: "The natural habitat [of the animal] is not a zoo. We are visitors here: it is not a zoo. I do not go to zoos." Unlike an encounter with a zoo animal, "a memorable wildlife encounter is witnessing some of the behavior of the animal without it knowing you are there." Similarly, a memorable wildlife encounter is "being in a relatively solitary situation where you could observe natural phenomena in a natural way, observing animals at close range doing normal activities." It was often important that the observer was not felt to be observed by the animal: "When [I am] able to observe birds in their natural habitat," or "When wildlife ignore you and yet you can be close to them, to observe them." For such viewers, canoeing or hiking ensures that they are not disturbing the natural environment or the behavior of animals. "Canoeing and listening to loons on Astotin Lake [is part of my definition]. I remember when there was motorboating on the lake. I support banning motorboating." Another defines such an experience as one of "safety; being close to wildlife and not having them affected. A canoe allows you to float by animals." One other valued "being able to get close to an animal and to watch it in a natural setting; it is more natural along the trails." This kind of encounter, above all, involves the emotion of respect for the wildness of wildlife: "A memorable wildlife encounter is something in its natural setting: we do not disturb it."

A park employee's encounter with wildlife stressed the importance of the attribute, species is free, because "you see the wildlife the way they are." Another employee asserted, "People come to see wildlife in their own environment." Park employees, however, took it for granted that wildlife in EINP were free in their own environment.

Focus group university students also described their most memorable wildlife encounter in terms of wildlife being free. One student reply addressed this attribute together with the attribute of surprise: "I almost had a sense of communication with the coyote. It was free, relaxed, calm and peaceful. [A] coyote . . . was free in his own environment. [It is a] quality wildlife experience when I can merge with the animals."

Rarity of wildlife.

Rarity of wildlife was considered important by 6.5% of respondents who gave an answer. Bison were considered rare by some respondents, as was the whole idea of wilderness. Rare was defined as not seeing a wildlife species elsewhere, including back home. If the wildlife was not rare, or if it was available elsewhere, that particular wildlife encounter dropped in importance. When defining "rare," often non-Canadians would consider the worldwide status of a particular species. For example, a group of four elderly men and women from the Netherlands were interviewed during July of 1996. They considered an encounter with bison to be the most memorable wildlife encounter that they had experienced in EINP mainly because "the bison is rare in the world. We do not have any in Europe." One German considered bison to be rare because he had traveled to Wood Buffalo National Park to see bison, could not see any and had then returned to EINP.

Wildlife viewers, who looked at wildlife in an ecological framework and had a global view of wildlife preservation, expressed rarity of wildlife as a factor for a memorable encounter. This view of a wildlife encounter contrasted with that of a beginner wildlife watcher who would focus on the immediacy of the encounter and define the encounter itself through other attributes such as size, shape and wildlife being close instead of fitting the wildlife species into an ecological context. Many advanced viewers would focus on the rarity of wildlife within an ecological framework, and some authors have expressed great concern for the rarity of certain species, as they have recognized that we must depend on other life forms to survive (Soulé, 1993).

Rarity of wildlife was most important for non-Albertans; and, in defining "rare," non-Albertans often considered the worldwide status of a particular species. Some urban Albertans included the rarity of wildlife in their definition of a most memorable wildlife encounter. As one perceptive visitor explained, "[I like] viewing moose; they are difficult to see -- not too many elsewhere. I love the birds too; I do not look at individual animals but take an ecosystem approach." "Seeing bison and other wildlife not normally seen" is a definition given by one urban Albertan. Another even used the word "rare" when defining a good wildlife encounter: [It] is one that gives you a feeling of excellence -- something rare, where the wildlife is doing something interesting."

In defining their most memorable wildlife encounter, rural Albertans also rated rarity of wildlife prominently (including not seeing a particular form of wildlife elsewhere). Often these rural Albertans asserted that if they could see a species of wildlife on their rural property (such as a moose), then that animal was not part of a definition of a memorable wildlife encounter. On the other hand, the availability of a particular species enhanced the experience for some who mentioned experiences with wildlife on their property: "I encourage the moose to browse through the vegetation on my farm all winter long; deer come around as well." "I like watching bison; I have moose and deer on my farm." "Buffalo are my favorite; moose, deer and elk are not my favorites because they are common on my farm property." "I have not had any memorable wildlife encounters in EINP; I see wildlife on my farm."

Some park employees felt that their wildlife encounter was important because it involved the attribute, rarity of wildlife: "When I was a kid, the first large animal I saw was a moose in the woods on our farm by Smoky Lake; wild animals over there are rare." "[It is] unusual to see a moose; a moose symbolizes Canadian wilderness. [One] cannot see a moose in the mountains." Rarity was, of course, inversely related to availability: "The more the animal hides, the less popular it is; deer and elk run." One member of the Friends of Elk Island Society focus group also mentioned the rarity of wildlife: "Seeing them [migrating pelicans] is a really rare experience."

Other respondents did not distinguish between rarity of wildlife and the feeling that a species was endangered. Many interviewees may have felt they had answered the question on species' endangerment earlier when they had responded to the rarity of wildlife. Non-Albertans, for example, did not distinguish between rarity of wildlife and the feeling that a species was endangered. Nevertheless, the small response for this attribute indicates that visitors lack awareness of ecology, one of the main concerns of park management.

Animal is cared for.

Only a few respondents (1.5%) who provided an answer mentioned that it was important to know that the wildlife is cared for. Kellert (1993) mentions that strong affection for individual parts of nature can be expressed as a feeling of "love" for nature. He further says that a humanistic experience of nature can result in care and nurturance for individual components of nature. The mere sight of a moose in close may help people to maintain their health. Manfredo, et al. (1995) express that humans have values. Held values or one's attitudes toward issues are important in assessing attributes of wildlife viewing. For example, one value expressed by Manfredo, et al. is animal rights or human perception about how an animal is treated.

Only a few respondents mentioned that it was important to know that the wildlife is cared for or not under stress, i. e., has enough food, etc. This may be a reflection of the fact that some rural Albertans care for livestock. One rural respondent mentioned, "I want to make sure we protect these mammals for our grandchildren."

Ties to the past or importance for historical reasons.

Some interviewees (1.6%) said that species' ties to the past or historical importance helped them to describe a memorable wildlife encounter. Some respondents said that one of the reasons bison were central in their memorable wildlife encounter was because of the strong connections that the bison have to the native culture of North America. Other species, except for a single mention of a moose, were not thought of as having connections with the past. Some wildlife viewers fitted a particular species into a historical context and formed a connection to the larger environment. A very strong connection was formed with the bison and its powerful role in the pre-settlement era of North America. These wildlife viewers seemed to have a strong connection to native species.

Some authors have written about how important it is to have a historical connection. Worster (1995) remarks that "whether we choose to learn from the past or not, whatever we choose to learn or ignore, the past is our only instructor" (p. 83). Individual species possess these historical connections from which we can learn.

Only non-Albertans and rural Albertans referred to a species' historical past, when reporting their most memorable wildlife encounter. A few rural Albertans valued the idea that species represent ties to the past, especially bison: "I enjoy natural history," said one visitor; "buffalo was the mainstay of the country." Another explained, "Buffalo history in this country makes them special -- the life blood of the early settlers." However, other categories interviewed did not make direct reference to this attribute.

Non-Albertans also remarked about the attribute, feeling that the species represents ties to the past or is important for historical reasons: "Cormorants look prehistoric." "I have never seen a bison before. [It was] incredible because they are rare and have an historical meaning: part of our heritage, almost a dinosaur." "[It is] very important to know the history of herds: white people killed herds; Indians lost herds." "We are learning about North America through TV: Europeans are interested in bison. England is interested in the history of North America; Germans are interested in cowboys and Indians." "Bison are so important -- so close," said one out-of-province viewer. "[This is] the only wild spot where you have a chance to see bison in Canada." "Experiencing a memorable wildlife encounter means having knowledge beforehand, seeing species from the past in the wild, having a spiritual connection with wild North America." "A lot of Europeans associate bison with the West." "[I] felt emotional attachment, a nostalgic sense of history."

The feeling that the species represents ties to the past or is important for historical reasons played a part in making encounters special. One staff member's comment summarizes this attribute: "Bison symbolize the Wild West as seen in the movies, especially for the Europeans."

Species is endangered.

The attribute, species being endangered, was the least frequently mentioned attribute. Some respondents did not distinguish between rarity of wildlife and the feeling that a species was endangered. In a study completed in Denver, Colorado, over 75% of Denver residents indicated that seeing endangered species was very or extremely important (Manfredo, et al., 1991). This may relate to what Berger (1980) describes as the progressive marginalization of animals in industrial society. Prior to this, animals constituted the first circle surrounding man. Also, Katcher and Wilkins (1993) imply that because certain animals and plants are considered vermin (i.e., weeds), they can or must be exterminated.

More complex wildlife viewers who made reference to endangered species recognized a deep connection to wild animals. Some authors have written about endangered species and the value of individual species. For example, Shepard (1995) wrote, "I realized that the individual animal's beauty and identity remain our principal source of satisfaction" (p. 23). Other authors echo the sentiments of advanced wildlife viewers and their deep concern for endangered species. Like the respondents interviewed, these writers had a deep concern for the interconnected nature of life. One such author, Worster (1995), states that ". . . the extinction of obscure species has become a global concern expressed in international treaties" (p. 79).

Some rural Albertans referred to bison as endangered. Other respondents, such as non-Albertans, did not distinguish between the attributes, rarity of wildlife, and the feeling that a species was endangered. However, school children had the feeling that the species was endangered, most likely because the concept "endangered" had been part of their class lesson. Also, many interviewees may have felt that they had answered this question about endangerment earlier when they had been asked about the rarity of wildlife. Nevertheless, the small response for this attribute indicates that visitors' lack awareness of ecology, one of the main concerns of park management.

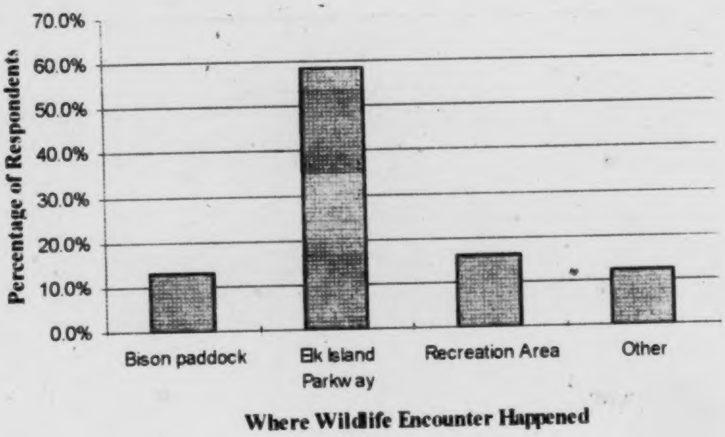
Where the Encounter Happened

As indicated in Appendix L, the majority of visitors who provided an answer (58.5%) said that their most memorable wildlife encounter happened along the Parkway (see Figure 10). Approximately, 16.2% of visitors said their most memorable wildlife encounter happened in the Recreation Area, and 13.1% of respondents indicated that for them it took place in the Bison Paddock. Over 10% of visitors indicated that they experienced their most memorable wildlife encounter while hiking, canoeing and participating in other activities while in EINP.

Bison Paddock

Some 10.0% of urban Albertans said their most memorable encounter happened in the Bison Paddock. In contrast, only 4.8% of rural Albertans had a memorable wildlife encounter in either the Recreation Area or the Bison Paddock.

Figure 10. Where in EINP wildlife encounter happened.



The Parkway

Among respondents, 58.3% of urban Albertans, 71.4% of rural Albertans and 63.0% of non-Albertans said their most memorable wildlife encounter occurred along the Parkway.

Recreation Area

A significant number of urban Albertans (20%) had a memorable wildlife encounter in the Recreation Area, as did 10.0 % of non-Albertans.

Hiking and Other Recreational Activities

A total of 11.7 % of urban Albertans had memorable wildlife encounters while hiking the trails; 19% of rural Albertans had one while hiking the trails and participating in other recreational activities in EINP. Very few non-Albertans (13.3%) had memorable encounters while on a trail or participating in other recreational activities. However, one visitor from Holland came within 10 meters of a bull bison while mountain biking on a trail and was fortunate to avoid injury.

Viewing From a Vehicle

A total of 62.4% of respondents said their encounter happened while in their car (see Table W1). Specific responses to this question varied among categories of visitors (see Table W2). This category of visitors, which is generally unfamiliar with the Park, gains most of its wildlife encounters on the road. Nearly 79% of non-Albertans reported that their wildlife encounter happened while they were in their car. This data underlines the importance of the Parkway to non-Albertans.

Sixty-five percent of rural Albertans had a wildlife viewing experience from a car. The same percentage of rural Albertans surveyed would view wildlife from their cars while driving to or from work, while driving relatives or friends through the Park or while on a sightseeing tour, alone or with their spouse. A large number of park employees (87.5%) said they had their wildlife encounter in a car while traveling through EINP to their work site. Some also had a wildlife encounter while visiting EINP with relatives or friends. Other park employees, especially wardens and those who work directly with wildlife, had significant numbers of wildlife encounters outside their cars.

Chapter 7: Variations in Wildlife Viewing

Comparisons Among Types of Viewers

In order to develop recommendations for EINP management, it is important to understand the differences between attributes and how categories of visitors and focus groups defined their most memorable wildlife-viewing encounter. In discussing the characteristics of these groups, first their species preference will be compared. The discussion will then proceed to compare the various attributes of the groups' most memorable wildlife encounters.

Results of interviews with urban Albertans, non-Albertans, rural Albertans, students and park employees were compared. Comparisons were also drawn with focus groups that were interviewed, including the Fort Saskatchewan Natural History Club, The Friends of Elk Island Society, a University of Alberta environmental science group and an environmental education specialist focus group. (The environmental education specialist focus group, since it is concerned with the viewing characteristics of children, will be discussed in Chapter 8.)

Wildlife Species Preferred (Question 8)

Bison were preferred by 56.0% of respondents followed by moose (7.1%) and Manitoba elk (5.0%). Some 8.5% of respondents said they preferred birds but did not specify which ones, while 3.5% of respondents specified which bird they preferred (see

Appendix P). All visitor categories singled out bison as their favorite wildlife species. These results are consistent with the Elk Island Visitor Exit Survey (Parks Canada, 1994).

Urban Albertans

Bison were preferred by 56.9% of urban Albertans while moose were preferred by 7.7% of urban Albertans. A large number also said they had no preference (9.2%). Urbanites, because they made up the largest group of respondents, also mentioned a variety of other species as their favorites, such as birds in general (9.2%) and Manitoba elk (4.6%). When answering questions 5, 6, 7 and 13, the same trends appeared, along with some respondents mentioning significant encounters with Common loons, American white pelicans and other species.

Rural Albertans

For rural Albertans, the bison was certainly the most popular wild animal. Wildlife that can threaten a rural person's livelihood were not popular with rural respondents. For example, deer sometimes eat hay. Wildlife seen on rural property were not considered part of a memorable wildlife encounter in EINP. Clearly, the responses by rural Albertans generally indicate a great attachment to wildlife, particularly bison and moose.

Non-Albertans

Not surprisingly, bison rated the highest for non-Albertans: 58.8%. Students were the only group that had a higher response for bison (66.7%). These animals were considered rare by non-Albertans. Often, visitors indicated that bison were not available elsewhere in a natural setting. One German respondent, interviewed along the Parkway in 1996, walked too close to a moose and her calf and was in danger of being attacked, but the majority of non-Albertans experienced no such aggressive behavior in encounters with bison. Unspecified birds were named by 11.8% as their favorite species, and the moose was named by 8.8%. This category of viewer was least likely to say they had no preference (5.9%). This enthusiasm for a favorite species can be explained by the fact that many non-Albertans are from European countries where wildlife in general has largely disappeared.

Park Employees

Only 45.5% of park employees felt that bison was their favorite animal, while 9.1% said moose was their second favorite wildlife species in EINP (see Table P2). Speaking on behalf of visitors, most of the front-line staff mentioned that visitors preferred bison. However, a large percentage (27.3% of all park employees) said that they enjoyed all wildlife in EINP, or that they had no preference.

Fort Saskatchewan Natural History Club and The Friends of Elk Island Society

Most members of the Fort Saskatchewan Natural History Club took an ecosystem approach to answering the question, rather than singling out one species and comparing it with another. This kind of response is typical of advanced wildlife watchers: "All aspects of the park are important." "Nature warrants preservation unspoiled." "The whole setting [is important]." Members of the Friends of Elk Island Society had difficulty answering this question, most of them responding with, "We have a lot of favorites." However, one group member, who studies coyotes in EINP as part of her doctoral thesis, said that coyotes were her favorite species there.

Environmental Science Students

The favorite species question was also posed to the University of Alberta environmental science students' focus group. The answers from this group were more varied than from any other focus group. "I enjoy seeing bison for what they represent -- a species that was decimated," said one. Another, who preferred beaver, explained that there were "so many opportunities to see them doing their own thing. The park's habitat is perfect for beaver; we are able to watch them uninterrupted." This group's answers were detailed and unusual: "My favorite wildlife species in the park is the pygmy shrew. I also like Wood bison. [One] can see the biggest and the smallest species at the park. Sapsuckers are a dynamic species. They always engage in communication with others. They are always flying around, defensive about their territories. [They] are visible . . . have presence; . . . [one] can watch them closely."

Generally, trends in favorite wildlife species were established from interviews with focus groups. From environmental educators, it was learned that children aged ten years and younger prefer animals to birds. Front-line park employees identified with the typical visitor, who entres EINP for an easy, relaxing wildlife viewing experience -- namely, viewing bison from a car. Other wildlife watchers, such as the Fort Saskatchewan Natural History Club, the Friends of Elk Island Society and the University students, liked all species.

Attributes and Differences Among Categories of Visitors and Focus Groups

Of all the different categories of visitors, the urban Albertans provided the greatest number and variety of responses to the questions related to defining a most memorable wildlife encounter (questions 5, 6, 7 and 13). The size of the urban Albertan sample may have influenced this aspect of the data, as it increased the possibility that this group mentioned more attributes. Responses indicate that individuals in these categories appreciated the simpler and more primal dimensions of wildlife encounters, such as aggressive behavior.

The wildlife-expert focus group responses indicate the variety and complexity of experience possible when a viewer is more fully educated in park ecology. The views of park staff, revealed by both the focus group of front-line staff and the individual interviews with staff, provide an inside perspective.

The diversity of responses was not nearly as great for park employees as for other categories of people. Generally, the front-line staff did not provide as wide a range of answers as the Fort Saskatchewan Natural History Club or the Friends of Elk Island

Society and reflected comments given by EINP visitors. Their definition of a most memorable wildlife encounter varied, but on the whole, their answers were more complex than the other visitor categories.

The Fort Saskatchewan Natural History Club focus group consisted largely of older men and women (about 60 years old) who are intensely interested in nature. More than 75% of the group consisted of keen birdwatchers. The members of the club share a common purpose, that is, wildlife watching. Most members are advanced wildlife watchers, and this is shown in their responses. While other respondent categories (urban Albertans, non-local Albertans, rural Albertans, park employees or students) show a broad range of responses from the very simple to the complex, all members of the Natural History Club gave a complicated, sophisticated definition of a most memorable wildlife encounter. Most members of the club think of EINP as only one of many wildlife viewing destinations.

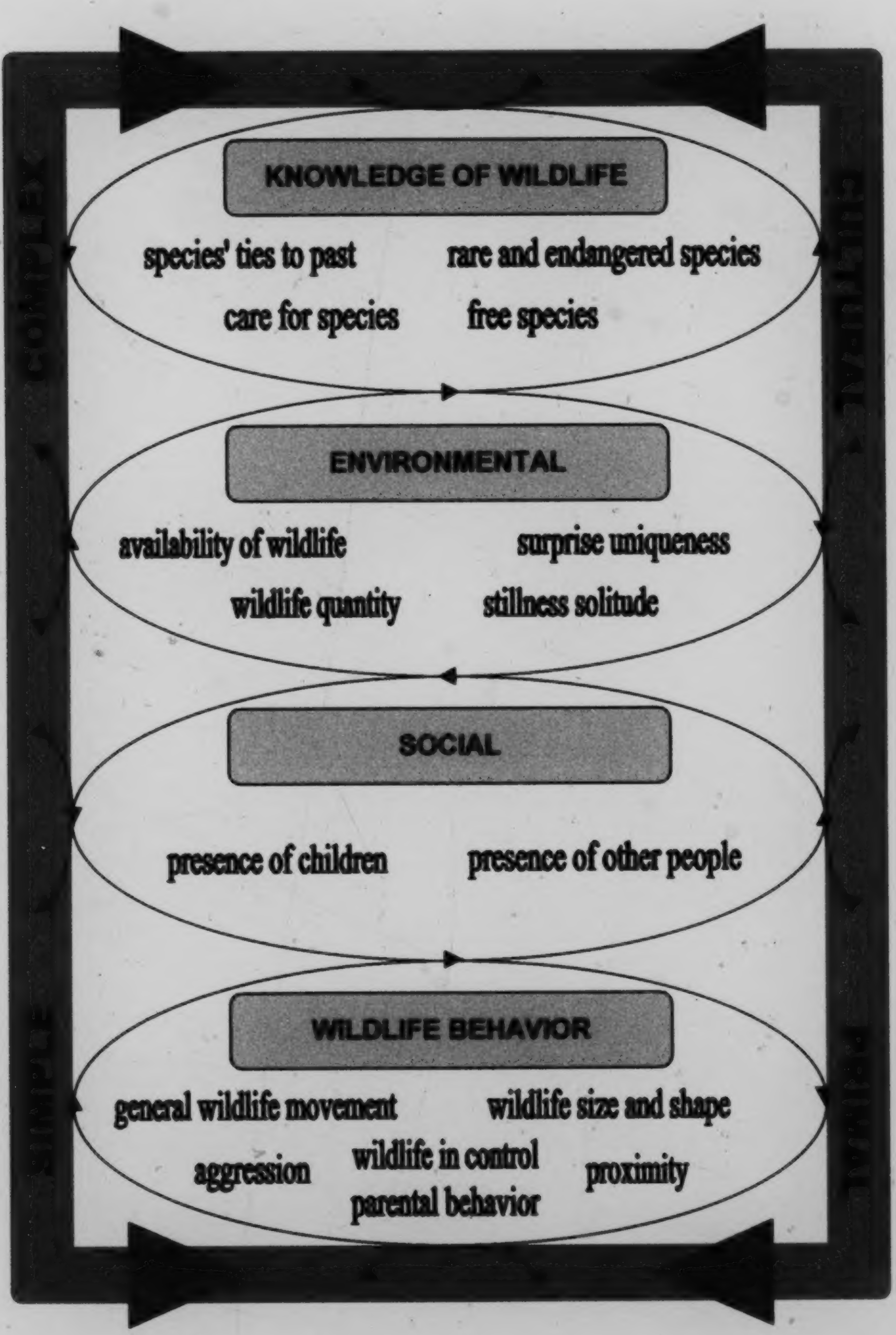
Another focus group, The Friends of Elk Island Society, is a group of volunteers committed to furthering the preservation and education mandate of EINP. With their active roles behind the scenes, they are one of the most dedicated volunteer groups in EINP.

The environmental science students' focus group consisted of university students who had graduated or were in their final years of study. For the most part, their responses were indicative of a group of more sophisticated wildlife watchers. Their personal responses, which concerned a sense of intimacy with wildlife as well as intimacy with the ecosystem in general, evidenced their environmental education. One student defined a quality experience as "a viewing experience off the trail, totally immersed in the ecology of an ecosystem: a connection with the animal." "Viewing the animal," said another, "makes me feel connected with the environment." Yet another expressed that "being part of the environment is part of the quality experience; it is rewarding in a different sense; it makes me feel better when you can integrate with the environment."

Summary of Attributes' Trends

A model was developed to demonstrate that a focused memorable wildlife encounter embraces a single attribute or combines transitions along primal or cultural strands and is simple or complex or a combination of these (see Figure 11). Hence the arrows in the model show that the respondent can move back and forth between simple and complex, primal or cultural. The model also shows the seventeen attributes of a memorable wildlife encounter that were isolated. A memorable wildlife encounter can consist of any one or many of theses attributes and can be simple, complex, cultural or primal or a combination of these.

Figure 11: Wildlife viewer attributes of a most memorable encounter in Elk Island National Park - a Transition Mosaic.


KNOWLEDGE OF WILDLIFE
species' ties to past
rare and endangered species
care for species
free species
ENVIRONMENTAL
availability of wildlife
surprise uniqueness
wildlife quantity
stillness solitude
SOCIAL
presence of children
presence of other people
WILDLIFE BEHAVIOR
general wildlife movement
wildlife size and shape
aggression
wildlife in control
parental behavior
proximity
COMPLEX
SIMPLE
CIVILIZED
PRIMAL

Behavioral Attributes

For behavioral, i.e., wildlife caused attributes, trends appeared. Size and shape (of wildlife) was the most important to school children, non-Albertans, park employees and, to a lesser extent, urban Albertans. None of the focus groups mentioned this size / shape attribute, whereas it was an attribute that was important for all categories, especially for urban Albertans. Wildlife being close / being close to wildlife was also especially important for non-Albertans and for rural Albertans; it was also very important to children. To a lesser extent, park staff and focus groups like the Friends of Elk Island Society felt that this attribute was important and that the memorable wildlife encounter had to be unusual as well.

Rural Albertans and park employees indicated a strong preference for the maternal-paternal behavior / preference for seeing young born attribute. Of all the categories surveyed, unspecified fast movement was the most important for students who were 12 years old and younger. Park employees, non-Albertans and focus groups mentioned this attribute only briefly, and urban Albertans did not feel that unspecified fast movement was important.

Frequent visitors to EINP, such as urban and rural Albertans, seemed to feel that their most memorable wildlife encounters involved the aggressive behavior of wildlife, specifically the aggressive behavior of bison. School children cited aggressive behavior as the most important attribute of their wildlife encounter. Wildlife in control seemed to be the most important attribute for urban Albertans.

Social Attributes

Social attributes included respondents mentioning the presence of children and the presence of others as major contributing factors to their most memorable wildlife encounter. The presence of children was most important for urban Albertans, rural Albertans, EINP employees and, to a lesser extent, for non-Albertans. Among the focus groups, the presence of children did not seem to be important in the wildlife encounter.

Urban Albertans and rural Albertans felt that the presence of others (excluding children) enhanced their wildlife viewing experience. Some of the focus groups also mentioned that the presence of others was important to their wildlife encounter.

Environmental Attributes

Environmental attributes included stillness / quiet / isolation / solitude, quantity of wildlife, surprise / uniqueness of the wildlife encounter and the availability of wildlife. The attribute, surprise / uniqueness was more important to repeat visitors such as urban Albertans and the focus groups. It was less important to non-Albertans, probably because they are often infrequent or first-time visitors and most tend to concentrate on roadside wildlife encounters.

Urban Albertans and some of the focus groups were the only categories that felt that the experience of stillness / quiet / isolation / solitude was important in defining a most memorable wildlife experience.

Some of the focus groups had responses similar to urban Albertans. Of all categories of respondents, only urban Albertans and the Friends of Elk Island Society focus group said that the quantity or number of wildlife was an important attribute of their wildlife encounter. Respondents from all categories, however, said that a species had to be available for a memorable wildlife encounter to occur.

Knowledge Attributes

Knowledge attributes included rarity, species being free, species' tie to past, species being endangered and animal being cared for. Rarity of wildlife was more important for non-Albertans than for any other category of respondent. If the wildlife was not rare, or if it was available elsewhere, that particular wildlife dropped in importance for the non-local respondent. When defining "rare," often non-Albertans would consider the worldwide status of a particular species.

Each category of respondents seemed to have its own assumptions or biases regarding the freedom of the species and the natural environment of the species. This attribute was the most important to rural Albertans and non-Albertans. Wildlife being free was less important to urban Albertans and to students.

Non-Albertans and rural Albertans referred to a species' historical past, when reporting their most memorable wildlife encounter. One couple referred to a Double-crested cormorant as looking like a prehistoric bird, a symbol of the past. However, respondents did not directly refer to the feeling that the species represents ties to the past.

Species being endangered was the least frequently mentioned attribute. A few respondents said that their feeling that the species was endangered made their wildlife encounter more special. Some rural Albertans referred to bison as endangered. Other categories, such as non-Albertans, did not distinguish between rarity of wildlife and the feeling that a species was endangered. On the other hand, school children had the feeling that the species was endangered. Some responses from rural Albertans expressed the feeling that the species is endangered: "Bison are magnificent; [there are] hardly any left in the world; there is a sense they are well cared for." Rural Albertans often mentioned that wildlife would not run away. One rancher remarked, "Moose on my farm run away when they see me. Here at Elk Island, they look settled in their environment." Ranchers did not care for wildlife that reduced their profits. A rancher bordering EINP said, "I poisoned the wolves that killed my cattle. They were big and black. They were too big to be coyotes." Another said, "I do not like coyotes. There are too many coyotes. I electrified my fence to keep coyotes out." Farmers or ranchers also disliked White-tailed deer, which sometimes eat hay.

Only a few respondents mentioned that it is important to know that the wildlife is cared for. For example, there was great concern over a two-year-old moose that had turned white and lost most of its hair from moose ticks. This attribute seemed to be of greater concern for rural respondents than for any other category.

Chapter 8: Children and Wildlife Viewing

In order to examine the full range of different park visitor groups, school students of varying ages were asked the question, “What is your most memorable wildlife encounter?” Most of the results focused on the wildlife species present. Attributes such as size / shape and movement play a large role with students, especially those in primary school. Several hundred students from greater Edmonton and its surrounding areas participated; most of the children interviewed were in grades 2 to 5. Some junior high and high school students were interviewed. The results offered by students represent the ideas of several hundred students. Several thousand students, mostly Grade 6 and younger, visit EINP each year, mainly in May and June, most of them participating in the curriculum-driven pond study unit. It is important to understand how children in the primary grades and higher understand a wildlife viewing experience and what they consider a memorable wildlife encounter.

Environmental Education Specialists

A focus group consisting of EINP environmental education specialists was asked questions about the attributes of children’s quality wildlife encounters. This group consisted of the environmental education specialist employed by EINP, as well as contract environmental education assistants. Headed by a park employee, this group is responsible for coordinating the environmental education program in EINP. In responding to the definition of a memorable wildlife encounter, the environmental education specialists often spoke from the perspective of the student. The answers given were surprisingly simple. However, as the vast majority of students are Grade 6 or younger, this is not surprising. The responses of students, teachers and environmental educators form a close relationship; the subject of children's wildlife viewing will be looked at from each of these perspectives.

Some of the educators' responses, however, were unique to their position and perspective. The environmental education focus group spoke at length about the educational needs of a large number of children, as well as their strategies for educating them. According to the educators, "Three schools of kids had never been out of the city. We are talking about a population that is cut off from the natural world. Most kids only make it to parks in Edmonton and call that a natural experience. Kids need to see the big picture. [We] should talk about a global connection. [The] emotional connection is important, too: our role in the natural system -- a person's connection to the deer, bison and the forest." What was apparent in the focus group discussion was that there is an emphasis on looking at wildlife as part of a larger whole. As the grade level increases, this is especially so: "Younger kids, Grade 4 or younger, focused on individual plants and animals. Kids (Grade 5 and older) knew the word ecosystem but might not have understood the meaning completely. Most kids (Grade 4 and older) understood the purpose of protecting EINP and preserving the animals."

One important attribute mentioned by environmental educators is that the presence of others often enhances the wildlife experience for students: "Kids want to be with an adult during the wildlife experience, especially a knowledgeable adult. The adult is the bridge. Kids need a person to interpret what they see." Children were also the major motivating reason for parents (and teachers) participating in a wildlife viewing experience.

Children as a Respondent Category

None of the school groups surveyed stayed overnight in EINP. Thirty percent visited EINP for more than 5 hours, without using accommodations, while 60 % spent between 3 and 5 hours there, and 10% of school groups spent between 1 and 3 hours

The majority of students interviewed (83.3%) said they come to EINP once a year, in organized class activities. For some kids from the inner city, their visit was their first experience out of Edmonton. The remaining 16.7% indicated they visited EINP three or more times a year. Most of these visitations are a result of a student telling his/her parent about EINP following an organized class visit.

All of the schoolchildren interviewed (100%) felt it was very important to meet wildlife while in EINP. Wildlife in close / wildlife being close, wildlife in motion and large size were particularly important to the elementary children interviewed.

About 67% of students interviewed had a memorable wildlife encounter while hiking. One of the favorite class activities in EINP is hiking the short Amiskwiche or Lakeview Trails. Wildlife can easily be seen on these trails. One class experienced a memorable wildlife encounter while picnicking, by observing a colony of ground squirrels.

Species Preference and Identification

About 67% of schoolchildren participating in environmental education classes said that bison were their favorite wildlife species in EINP (see Appendix P). The next largest group of children said leeches (33.3%) were their most favorite. Many other species found on the boardwalk that could be gathered in a water-filled tray with a dip net were also popular, such as the tadpole, Fat-head minnow and hairworm.

Children, followed by non-Albertan respondents, consistently scored lower than other categories in identification of Elk Island wildlife. Over 60% of the children could identify a female moose, White-tailed deer and a coyote (see Tables AG1, AG2 and AG3 respectively). However, fewer children could identify the birds, plant or butterfly photos. Most students surveyed were Grade 6 or younger and seemed to lack the knowledge of a lot of EINPs wildlife. Their knowledge improved in the areas on which their teacher concentrated, such as the wildlife present in the water beside the boardwalk: namely, leeches, muskrat and small fish such as the Fat-head minnow. Some of the children were in kindergarten and had never seen a moose. The number of children correctly identifying the Black-capped chickadee was also low, at 20%. Some children interviewed even had trouble identifying a Red-winged blackbird that was 10 meters from the class. Only one child whose father and mother were avid birdwatchers seemed to be able to identify most of the bird species. The educators expressed a sense of frustration with children's species' preferences, explaining that children have been taught by their environment to focus on the large animals: "Animals are more important to kids than birds because of our culture. [There is] a lack of information. Kids have not been shown the importance of birds. Kids know what a moose looks like. [But] they call everything on the water a duck. It is a cultural thing, focused on the brown-eyed animal."

Wildlife Sounds

The children interviewed were mostly primary students, Grades 4, 5 and 6. When asked about favorite wildlife sounds, 80% said they did not have a favorite sound. There was mention, however, of the sound that Richardson ground squirrels make in the Recreation Area, which was a sound they recognized as a "gopher's."

One of the teachers, when asked why they gave such a response indicated that kids of this age process most of their information in a visual manner. Among the environmental education specialist focus group, there was quite an unusual set of responses to the sound question. "Knowing birds by sounds is difficult for kids," explained the specialists, "Kids on our field trips do not get out of the city enough to have favorite sounds." "City kids turn off ears because of so much stuff coming in. We need to focus them; then, they are into a whole new experience." "The only time the kids talked about sounds was with Red-winged blackbirds and some grebes."

Comments by environmental education specialists further explained the importance of sight: "A lot of kids would ask about bison and where they could see bison." "Animals are more important if the kids see them." "Kids want to see wildlife, not just hear about it." "For kids what makes a quality wildlife encounter is a visual connection. In the city, kids are sheltered from sensual stimulus. In this environment, they are asked to open their eyes and their ears." "There are expectations on the kids' part that they will see what we told them they would in the pond study."

Attributes of Children's Quality Wildlife Encounters

For schoolchildren Grade 6 and younger, the most important attribute of a memorable wildlife encounter was availability of a wildlife species. Bison were the most popular form of wildlife in EINP with the children. A memorable wildlife encounter for them was "to see bison on the roadside."

In defining their most memorable wildlife encounter in EINP, most children rated highly aggressive behavior and the threat of personal danger as factors that contributed most to the wildlife encounter. (One child wanted to pick up a Richardson ground squirrel until the dangers of being bitten were pointed out.) In general, wildlife being close or being close to wildlife, the rapid movement of wildlife and their size / shape were also important to children.

Children Grade 6 or under had little understanding of the reason for the existence of EINP. Children above Grade 6 appear to take more of an ecological approach to studying EINPs landscape. Very few junior high students (Grades 7, 8 and 9) visit EINP, but older students were also surveyed such as a group of Grade 11 students from Alberta Vocational College. The instructor and students were asked about their most memorable wildlife encounter in EINP. They said seeing bison. However, the difference between these students and the younger schoolchildren was that these students were being taught to see the bison as part of a whole ecosystem. Unlike the elementary schoolchildren, Grade 11s included attributes, such as the feeling the species is endangered, the feeling the species represents ties to the past and the perception that the species is free or in its natural environment.

From the comments supplied by the environmental education specialist group, it was quite apparent that availability, movement and being close to wildlife were the most significant attributes of a wildlife encounter. Other attributes were also related, such as linkages to the past, but to a lesser extent. It is important to remember that elementary schoolchildren constituted most of the subjects dealt with by the environmental education specialists.

Availability

Simply seeing the wildlife was indicated by the environmental education group as essential in making a wildlife encounter so important to children "When riding on a bus, kids saw a bison; not too many said they saw a moose or a deer." "Kids want to see something. When you do a pond study, you are assured of seeing something."

Aggressive Behavior

Children more than any other category of respondents, felt that the most memorable wildlife encounter they had in EINP involved aggressive behavior of wildlife, animals fighting, the threat of personal danger, or seeing someone injured. This response related in part to the fact that most of the schoolchildren were Grade 6 or younger and had had a wildlife encounter with leeches on the boardwalk. They felt the leeches posed the threat of personal danger. "I think leeches are fascinating," said one, pointing out that "the larger [are] the more threatening." The children's favorite wildlife encounters involved the perceived threat of danger from a leech because of the blood-sucking behavior of some species and, also, because leeches look like snakes: "Leeches are snakes, then they move into little blobs." The students surveyed (mostly Grade 6 and younger) indicated that the perceived threat of danger from leeches was crucial to them in defining a memorable wildlife encounter. However, once a group of students found out that not all leeches suck blood, the leeches became less of a threat.

Schoolchildren also perceived bison as aggressive. Results from a Grade 3 class support the indication that the fear of bison was also important in defining a memorable wildlife encounter. The students, especially the girls, when they learned fresh tracks of a bison had been found on the Lakeview Trail, were reluctant to forge ahead on the trail because of the perceived fear of bison. According to one educator, "The group passed within 30 feet of the bison on the Amiskwiche Trail; they felt fear, danger and were affected by the animals' size. The teacher told the students to run and hide behind a tree if the bison charged." One child boasted, "I was fake-charged by a buffalo on the Amiskwiche Trail." But another child said, "When I passed within 10 feet of the bison on the trail, I felt fear." At another time, "a bull bison was standing in front of the Interpretive Center door daring the kids to enter the building." Another student reported that "on Moss Lake, there was a herd of bison with young ones, so much bigger than you. You had no power; you were at their mercy."

Marks (1969) reported that with snake, spider and other animal phobias, onset usually occurred during childhood, with 70% occurring by age ten. Studies have shown that a biologically prepared readiness for early childhood onset of animal fears was adaptive for premodern humans because young children are especially vulnerable to snakes and other predators. The onset of agoraphobia was the latest to occur, with 60% of onsets occurring between the age of 15 years and thirty years of age (Marks, 1969). Bison are dangerous looking and a fear of them may occur early in childhood.

Unspecified Wildlife Movement

Appendix N also indicates that, for all the categories surveyed, unspecified animal movement / fast movement is the most important for children. Other respondent categories did not feel fast movement was important at all. The importance of fast movement to schoolchildren, especially those Grade 6 and younger, was confirmed when a muskrat swam by the boardwalk within a meter of a dozen students, and all students responded with amazement. "A muskrat was swimming alongside the boardwalk; we followed it," said one student. A colorful Red-necked grebe sitting almost motionless on its nest 3 meters from the boardwalk held little interest for the Grade 3 children. Over 20 children were observed walking by the bird, uninterested in it. The same muskrat (or perhaps an offspring) was present in 1996 and the results were the same, with children taking a great deal of interest in the muskrat as it swam by.

Richardson ground squirrels, with their rapid movement in and out of their burrows, in the beach area of EINP, were a favorite with the children. An educator explained, "The gophers are popular because they pop in and out of the holes." Schoolchildren up to Grade 7 were observed being drawn to the fast movement displayed by the Richardson ground squirrels. A Grade 3 class had a close encounter with a Red tree squirrel dashing up and down a tree in the main recreation area. The squirrel was only a few meters from the class and displayed rapid movements. It drew the immediate attention of the children. "I like the way the squirrel moves quickly up and down a tree." said one child.

A Trumpeter swan was diving for food 200 meters from the lakeshore but did not attract the attention of the children. A class of Grade 3s was also interested in how many tadpoles they could catch. The movement the tadpoles displayed fascinated them.

The environmental education specialists indicated that one of the most important reasons why this wildlife encounter was so important to the children was animal movement, especially fast movement. "Movement is important to kids. [It is] different [from] seeing a picture. Kids are impressed with the leech and its movement: the creature is alive and not just a bunch of stuff preserved in alcohol. Kids notice a muskrat when it is moving, not still. Kids expressed how a leech works its way through the water." A group member also stated that "movement is the key to why kids like animals compared to plants. Kids notice when the grebes are swimming. As a muskrat swam by the boardwalk, the kids noticed it. When an animal is doing something different, there is a chance to make a connection." "Something that has movement and is close" is very important to kids, "for example, gophers in the Recreation Area and bison on the roadside [seen] from a bus." "On the bus, they looked at a bison for two minutes. In a pond study, they spent half an hour with one leech. [They] could look at one leech ten times. If they find something they like, they could bring their friends back."

Movement as an attribute is very important for all children age 10 or under regardless of origin; e.g., children from Hong Kong reacted the same way to movement of Richardson ground squirrels as did Canadian children. One teacher remarked that children these ages are 90% visually oriented.

Wildlife Being Close / Being Close to Wildlife

Of schoolchildren, 10 years or younger, 13.8% felt that wildlife being close was important in defining a memorable wildlife encounter. Seeing bison up close was important to students Grade 6 or younger. The closer the bison was, the more enthusiastic the students were. If a bison could be viewed up close, the students were in awe of it. Some children did not think bison could live so close to Edmonton. Other children wanted to pet the bison. (Some of the children interviewed were poorer children from Edmonton who had seldom been out of the city so they had not been exposed to wilderness and had a lack of understanding of wildlife.) R. Yang (personal communication, 1997) says that unless wildlife is very large and very close, for example, then the children do not notice the wildlife or do not see the wildlife, particularly if the wildlife blend into the environment.

Some children interviewed said an encounter with Richardson ground squirrels was important because they came into close contact with the children and actually approached some of them. Red tree squirrels were also appreciated. “I liked the squirrel; it was close up,” said one student as a Red tree squirrel was running up and down a nearby tree. While in the Bison Paddock, a school bus stopped. The bison were in the distance. What became an attraction for the Grade 3 children was a nearby colony of Richardson ground squirrels moving in and out of their holes.

A specialist explained, “Kids can connect easier with an animal; I am not sure if they are disappointed if they do not see an ecosystem; they do, however, need to understand the ecosystem approach: it enhances the wildlife experience” and added, “When you live in a city like these kids, you are removed from the connection with the natural environment; there is an innate need for these kids to connect with wildlife and wilderness, to see something they have not seen before." The educators stressed the visual and emotional importance of children's wildlife experience: "Kids are visual and so need to be close to wildlife." "Kids make [intellectual] connections to a lot of creatures and emotional connections to understanding an animal. Kids build a feeling for that animal to facilitate things. Teachers are here to help build that connection. Kids need to relate to the natural world."

Size / Shape

Size / shape was of great importance to schoolchildren (22.9%) in defining a memorable wildlife encounter. Schoolchildren indicated the importance of the size / shape of leeches, for example. Children on the boardwalk became preoccupied with seeing who could find the largest leech. Some students were having contests to see which one could capture the largest leech. Shape was important, especially when they reported that the leeches extended themselves to look like snakes and then rolled up into a ball.

A memorable wildlife encounter for children often involved sightings of larger animals. According to the environmental education specialists, "larger animal sightings are especially important to kids." "I saw an elephant in the buffalo place," said one youngster, a member of a class of handicapped children who referred to seeing a bison in the paddock; "bison are bigger than horses; I study bison in social studies." Another class thought that bison were fuzzy. A moose's shape was also intriguing: "The shape of the moose's face was important to me." "The shape of moose is different: long and gangly."

Surprise / Uniqueness

During the survey, an additional attribute that appeared important to children, Grade 6 and under, was the element of surprise / uniqueness: 20% of students and educators mentioned this attribute as part of a memorable wildlife encounter. As a member of the environmental education focus group stated it, "Kids like variety. They went to Miquelon Lake and discovered there was not much variety. . . . Kids like to see something they have not seen before, a novelty -- wow." Children, for this reason, appeared less interested in birds. They can see birds in the city; hence, seeing a bird is not an unusual occurrence. However, for some who had seldom been out of the city, even a close-up view of a bison from a bus might have been a surprise or an unusual wildlife encounter. A coyote may appear unusual to a child, especially if a child does not come into contact with one in the city. For some of the country children, the Richardson ground squirrels meant little and were not unusual, but they fascinated the city kids. Some older Grade 9 students, while walking a trail, spotted a half-eaten deer leg and counted this as a wildlife encounter with an element of surprise. Some children, who were typical of more sophisticated wildlife viewers, eloquently defined the affective element of surprise in describing what a memorable encounter involves: "seeing many different species, not just buffalo but deer, elk, bison and warblers;" and "things out of the ordinary: a beaver lodge, listening to kits or watching animal signs or fresh tracks, a sign the animal was just there."

Species is Free

This study showed that 1.8% of children and educators cited "the perception that the species is free or in its natural environment." Younger students did not seem to understand the attribute: "I did not think that bison roamed free," said one, referring to the bison blocking the door. Only a few children, mostly those from the higher grades, understood the concept of the species being free. Quotes of this kind included, "A quality wildlife experience is being in a natural environment where there are no disturbances from humans, roads or airplanes." A wildlife experience is valuable "as long as the animal is acting naturally, and as long as it is not disturbed by any of your activities." "My best wildlife experience in Elk Island is engaging with a species by watching it and noting if you affect its behavior, without it running away."

Historical Ties and the Feeling the Species is Endangered

A number of children (2.4%) rated the following attributes highly: the feeling the species was endangered and the feeling that the species represents ties to the past or is important for historical reasons. A Grade 5 class had studied the history of the bison. By the time students reach Grade 6, these attributes became important. Some of the school groups visiting EINP indicated they studied endangered wildlife and species' ties to the past; for example, the history of the bison and its past. One enjoyed "seeing an animal [the bison] that was almost extinct."

According to the environmental education specialists, one critical dimension for children was the feeling that a species represents ties to the past or is important for historical reasons. "Bison are unusual for kids, like being in Jurassic Park, prehistoric old animals. In Grade 7, there was a discussion about the Peigan Indians and bison." "Bison are like dinosaurs." "Everything the students come to the park with, will add another experience to a previous experience. You can build linkages with the past." One older student had a more mature response that referred to the historical ties of bison: "[This is] the reason the natives were here; they used bison as a resource."

Maternal - Paternal Wildlife Behavior

Some children (3.9%), especially the girls Grade 6 and under, considered maternal-paternal behavior, preference for young and seeing young being born important. Children liked to see baby leeches, baby Richardson ground squirrels and also baby bison. Another reported that "last week the hatching of the dragonflies was important to the kids," and still another said, "We [the class] spent one half an hour looking at bison calves." Children said, "Bulls are macho; baby bison are not mean."

Girls, more so than boys, focused on maternal behavior. One teacher remarked, "Going through the Bison Paddock and seeing a young calf was important to the girls." Female students also mentioned the Red-necked grebe incubating her eggs three meters from the boardwalk, especially when the teacher was drawing attention to the nesting bird. The girls asked about the baby birds. The girls in one Grade 5 class mentioned to the teacher that young Richardson ground squirrels were cute and non-threatening. Students, especially girls, often referred to how cute and cuddly the bison calves were.

Location of Wildlife Encounter

The location for a memorable wildlife encounter varied among children surveyed. Half the students (50%) indicated their most memorable wildlife encounter occurred in the Recreation Area on the Living Waters Boardwalk (see Table V2). This is not surprising, as it is on the boardwalk that the majority of students would spend most of their time studying leeches and other water dwellers. As well, 30% of students said their memorable wildlife encounter happened along the Parkway, probably while entering or leaving EINP in the school bus. About 20% of students also said their most memorable wildlife encounter occurred in the bison paddock. Some students had wildlife encounters with bison and moose from their bus either on the Parkway or in the Bison Paddock.

Chapter 9: Strategies for Wildlife Viewing

In order to develop the best strategies for wildlife viewing, respondents were asked how their wildlife viewing experience could be enhanced. This included questions 21, 22 and 23: "If you had won the prize of spending the day with a wildlife expert of your choice, how would you want to spend the day in Elk Island? Doing what?" "Is there anything else concerning your interest in wildlife?" and "Is there anything else you could suggest to enhance your wildlife experience?"

Day With a Wildlife Expert: What Would You Do? (Question 21)

Most respondents said that if they won a day with the wildlife expert of their choice, they wanted direct access to that expert (see Appendix AC). This is not an unexpected response. Some respondents wanted a walk with a wildlife expert who could explain things to them, identifying wildlife, their habits and behavior. It matters little what kind of technology is placed in front of the visitor. Whether dazzled by a computer game or a film, the visitor still favored direct interaction with the wildlife expert.

Some respondents did not want the direct contact with a wildlife expert. A large number of urban Albertans (13.5%), more than any other category interviewed, did not want a wildlife expert and preferred to be alone. Perhaps, because a large number of urban Albertans are high repeat visitors, they may have already been in contact with park staff on an earlier trip to EINP, may feel somewhat threatened or intimidated by the idea, may have a level of wildlife knowledge as high or higher than park staff or may just prefer to be on their own. Rural Albertans were the next largest category (9.1%) of respondents, who did not want the services of a park wildlife expert.

Urban Albertans

For urban Albertans, who wanted a day with a wildlife expert, 18.9% said they would like to be shown animals and wildlife while walking, hiking, exploring trails or going on a guided walk. Another 16.2% wanted to be shown around or to go on a general guided tour to get to know EINP. A significant number of urbanites (16.2%) wanted to identify wildlife, to look for wildlife tracks or signs. They wanted to know where and when to see specific species.

Rural Albertans

Some 36.4% of rural Albertans wanted to explore EINP while walking with the wildlife expert. About 18.2% of rural Albertans wanted to be with the wildlife expert and observe wildlife, identify the wildlife and be involved in an animal survey. Rural respondents said they "would like to go on a canoe on a lake; you can always learn" or "would like to go out with them; see what they [the wildlife experts] are doing."

Non-Albertans

It's worth noting that only a very small number of non-Albertans (3.7%) did not want the expert to explain EINP to them (Appendix AC). As first-time visitors or very occasional visitors who have very limited time to spend in EINP, non-Albertans require a solid orientation at the start of their visit. The majority of non-Albertans (22.2%) preferred being shown animals and wildlife while walking, hiking or exploring trails on a guided walk. Another 18.5% of non-Albertans wanted to spend the day with a wildlife expert identifying wildlife. A total of 14.8% of non-Albertans would spend their day with a wildlife expert being shown around, going on a general guided tour and getting to know EINP. Finally, a further 11.1% of non-Albertans would like general explanations, interacting with and listening to the wildlife expert and having the expert explain things. Some non-Albertans wanted the expert to "explain everything," or liked "having guides take people on bird identification and bird song hikes."

Student Field Trips

Students were the largest category that wanted the services of a wildlife expert. Some 40% responded by saying they would like to spend the day with a wildlife expert being shown wildlife while walking or hiking, exploring the trails or going on a conducted walk. They would "ask him to show flowers, what buffaloes eat and what places they are not allowed to go" and to "explain about wildlife."

Park Employees

Park employees wanted to be involved with a wildlife expert in animal handling such as a round-up (25%), identification of wildlife (25%) and exploring the unknown aspects of EINP. Only 25% of park employees wanted to participate with a wildlife expert and be shown around, going on a guided tour or getting to know EINP. Most employees interviewed have worked at EINP for several years and already know much about the park. Quotes from park employees include, "I would like to see how bison act when they are being inoculated or dehorned" and "[I would like to] look at animals and talk about their behavior."

Is There Anything Else Related to Your Interest in Wildlife? (Question 22)

Respondents, when asked about anything else concerning their interest in wildlife, wanted better park identification signs, better orientation maps and more information on wildlife viewing locations as well as wildlife viewing times. (These signs and maps could significantly improve their wildlife viewing experience.)

A total of 16.7% of all respondents said that they would like to see more staff and longer hours for staff and more information on where to find everything. Visitors would like to have a personal orientation to EINP at the start of their visits. This makes a great deal of sense considering the urban origin of many of EINP's visitors and the visitor's desire to pack as much into his or her day as possible.

The second most common response (15.0%) was respondents' concern about the state of the EINP ecosystem, i.e., too much development in EINP, and the degradation of ecosystems worldwide. A total of 13.3% of respondents said that they would like to see information provided on wildlife: their habits, behavior, viewing times and places and checklists. Other responses included requests to provide more pamphlets, videos, exhibits, advertisements and promotions of EINP, more interpretive programs, better signage as well as maps and more information on where to find things. These responses are consistent with the Criterion study and with comments left by visitors at the Information and Interpretive Centres (Criterion Research Corporation, 1991).

Urban Albertans

About 26.3% of urban Albertans said they would like to see increased staff and staff hours, provision of an interpreter and facilities kept open longer. Visitors require extensive orientation on arrival at EINP, especially if they are first-time visitors. A representative quote from an urban Albertan was, "Keep the interpretive centre open more often. I went there, and it was locked." A significant percentage of urban Albertans (15.8%) were also concerned about what kind of condition the EINP ecosystem was in, whether healthy or stressed. "The preservation mission of the park should be kept as the main priority;" or "Preserve the wildlife." A total of 10.5% of urban Albertans volunteered that they wanted EINP infrastructure repaired and cleaned. Another 10.5% regretted the lack of information and pictures of wildlife habitats, behavior, viewing times and places and checklists.

Rural Albertans

Rural Albertans (22.2%) expressed concern about the preservation of the EINP ecosystem, as did 15.8% of urban Albertans and 36.4% of non-Albertans. Consistent with their agricultural background, they wanted to see more information on animal management. "Conservation is a big part of my interest in nature," said a rancher who delays cutting his hay so that ducks can nest successfully on his property. Other quotes by rural Albertans wanting a manicured park include "If the lake was cleaner we would get more people boating and swimming," or "Get rid of gophers, and clean up the beach."

Non-Albertans

Non-Albertans overwhelmingly (36.4%) expressed concern about the preservation of EINPs ecosystem : "It is important to conserve everything; there are too many animals disappearing;" "Just keep the wildlife;" and "I am concerned about the diminishing numbers of wildlife." About 18.2% of non-Albertans wanted an increase in park staff and for park staff to be present for longer hours, facilities to be open longer and provision of park interpreters who speak German. Among non-Albertans, especially Europeans, there was concern that North America would become devoid of wildlife like Europe. This was an even greater concern among non-Albertans than among urban Albertans.

Student Field Trips

Students and teachers, when asked about their interest in wildlife, responded mostly with comments on the nature of the EINP school program in which they were participating. Because of the nature of the question, teachers gave most of the responses. A total of 18.2% of students and their teachers wanted EINP better advertised and promoted: "They wanted the park to provide information sheets to schools, as the park is underutilized and intimidating and to provide kids with more information on the park." The same percentage of students and their teachers wanted better school programming offered by EINP, including more teacher workshops that fit into the science curriculum and the development of an educational game about herbivores and carnivores, since bison are the EINP niche. Such things as a teacher learning package, a curriculum-based package, information about the history of the bison, more tours and sessions about bison on trails need to be provided. Again, 18.2% of students and their teachers wanted more interpretive staff and longer hours for facilities. In general, they felt that EINP intimidates a lot of teachers and that teachers need better orientation.

A number of those interviewed (18.2%) about how their wildlife experience could be further enhanced said that they would like to see an increase in the staff and their hours, the provision of an interpreter or tour guide and longer hours for facilities and German-speaking staff (Appendix AE). A number of previous surveys, including the Criterion Survey, have shown a similar response: visitors want first-hand contact with the park staff during their visit, particularly at the beginning of their visit (Criterion Research Corporation, 1991). An exhibit or pamphlet does not receive as much support as park staff.

Park Employees

Park employees interviewed had three major areas of concern relating to their interest in wildlife. A total of 40% of park employees felt that it was important to provide their visitors with information or pictures of wildlife, viewing times and places and checklists. Most park employees wanted to see a much greater emphasis on telling the story about wildlife in EINP: "Have a lot more emphasis on story telling in the park in terms of wildlife." "The greatest wildlife encounter is the bison rut," asserted one staff member; "Get an old school bus and interpret this." Another said, "We need additional pamphlets on the moose and the Manitoba elk." Some 20% of park employees interviewed were also concerned about the deteriorating state of facilities and the need to clean them up. Also, 20% of park employees desired that information be provided on animal management and the dangers of wildlife.

Suggestions to Enhance Wildlife Experience (Question 23)

Urban Albertans

When asked what could be done to enhance their wildlife experience, 23.7% of urban Albertans said front-line staff hours should be extended in order to keep facilities like the interpretive centre open longer (see Appendix AF). As well, they desired that an interpreter should be provided for tours. A total of 18.4% of urban Albertans expressed concern about the state of EINP's ecosystem and desired information on EINP's efforts to protect it. One urban Albertan said, "Keep Elk Island the way it is: do not commercialize it." A total of 15.8% of urban Albertans indicated that EINP maintenance should be improved. Visitors mentioned repair of the roads and Recreation Area. Other urban Albertans wanted better EINP identification signs, better orientation maps and more information on wildlife viewing locations and times. Lack of orientation about animal sightings was a large concern. This data tells us that personal contact with park staff, proper orientation to wildlife sightings and concern for preservation of the EINP ecosystem are paramount in the minds of urban Albertans.

Rural Albertans

The preservation of EINP and its ecosystem was the concern of 30.8% of rural Albertans. One rancher, although he himself ranches bison, loves to drive through EINP and view bison in their natural setting and has concern for preserving the wild bison stock. Of rural people interviewed, 15.4% wanted more facilities in EINP, including more roads, picnic areas and other recreational facilities. One respondent wanted the lake cleaned in order to attract more swimmers.

Non-Albertans

For the largest percentage of non-Albertans (23.1%), contact with front-line park staff was the most important. These respondents wanted more personal guidance from staff. Some other non-Albertans wanted improved orientation on opportunities to find wildlife at the start of the visit, some 11.5% wanted better general information, while others desired pamphlets, brochures, videos and exhibits (including pamphlets in German) and 11.5% also wanted better interpretive programming. An equally large number of non-Albertans (11.5%) also spoke about the need to continue to enhance the ecological protection of EINP. One non-Albertan said, "The park should be expanded and more habitat preserved."

Student Field Trips

Of schoolchildren and teachers, 37.5% said that the interpretive programming could be improved by providing more curriculum-based programs that are determined in conjunction with the teachers using EINP. A large number of students and their teachers (25%) also expressed concern for the preservation of EINP and its ecosystem. According to the environmental education focus group, "most kids Grades 4 and up, look at not just preserving animals but protecting landscapes, habitats and endangered species, not just animals. The older kids define habitat as the whole environment, not just animals." A 12.5% of students and teachers wanted better information on EINP, including more pamphlets, videos, exhibits as well as exhibits. Also, total of 12.5% of students and teachers wanted more specific information on wildlife habitats, behavior, viewing times and places and checklists.

Park Employees

Park employees (22.2%) wanted to provide better information to the public and to their own relatives on wildlife habitats, behavior, viewing times and places as well as checklists of wildlife.

Fort Saskatchewan Natural History Club

Responses from members of the Fort Saskatchewan Natural History Club were varied and included suggestions such as "better signage: [We] did not realize we could camp," "Convert the old picnic shelter behind the snack bar to a tea house" and "Give rare animals a chance to breed and expand their territory."

Environmental Education Specialists

Suggestions for improvement of the wildlife viewing experience were also provided by the environmental education specialist focus group. Of all the focus groups interviewed, this one gave the most numerous, varied and insightful responses. The first suggestion was that "[we] keep perspective on how people are learning: [we are] talking about a process of many experiences. We should change our perspective, depending on the focus, that is, either zoom in or take a look at the bigger picture. . . . This is the reason why the pond study is so successful." Educators desired to consider the main themes at each grade level, to incorporate social studies and focus on wildlife. "A lot of teachers are not knowledgeable about the park, and so they need pretrip information. Not everyone has time to prepare something. Teachers want things sent out beforehand."

Specialists would like the interpretive centre to become more adaptable. "If we do bison watching, we do not need a theatre. We could have an effective pond study without a building, but a building is good for bad weather." The theatre could be used as a learning space, and an activity space with more interactive, tactile displays in the interpretive centre would be useful. "We need to have more hands-on learning: Let me touch something. . . . The Interpretive Centre should be more tactile, interactive." "You also need to provide a greater understanding of the ecosystem. Often people just say, 'I want to see the animals.'"

The focus group consisting of University of Alberta environmental science students had some valuable comments on how EINP could enhance their wildlife viewing experience. In general, this group recognized the need for a strong commitment to enhance the wildlife experience through education, thus making the whole visitor experience more involving. Interpretive signs on trails and directional signs were a desired feature. "The Lakeview trail could have 12 different brochures." According to this group, EINP could also be made more user-friendly by telling the visitor about recent sightings and providing better access for visitors to interpretive services before and after the wildlife experience (signage, maps, species lists). Informational sources such as libraries were suggested, as they could help explain reasons behind wildlife management. Staff could also rent binoculars and conduct guided canoe tours to facilitate wildlife viewing. Many of these suggestions were echoed by the visitors in general, especially the suggestion that the public have more access to the interpretive service before and after the wildlife experience. Other suggestions from the environmental education specialists relate to the wildlife experiences of students: "Just because we expose people to the experience . . . does not mean they are more knowledgeable. All we can do is to start the process, [to] get kids excited about the natural world."

Front-line Staff

Most of the comments received from the front-line park staff were reflections of comments they had received from EINP visitors. Front-line staff, who are located at entry points to EINP such as the Information Centre and the toll gates, are often asked by the visitor for brochures on moose, Manitoba elk and beaver. There is already a brochure available on the bison. Park staff, in order to enhance the visitors' wildlife viewing experience, would also like to see mammal checklists, more interpretive programs, nature walks and an interpreter who could point out features, telling the visitor where the animals are. They also suggested that the Information Centre should be made into a more comfortable place to be -- that is, with attractions such as a fireplace, TV, video recorder as well as coffee and tea sales. Staff advocated the construction of an information centre on Highway 16, along with visitor rest stops along the highway.

Chapter 10: Conclusion

The primary objective of this work has been to document and analyze the characteristics of a memorable wildlife encounter in EINP among a spectrum of visitors. Seventeen attributes were developed.

Contributions of this Study to Research

This study makes a number of contributions to research.

1. It developed a Transition Mosaic Model (TMM, see Figure 11). This model contends that people, while wildlife viewing, will follow sequential tracks because they are closely related. This is primal (instinctive, basic). However, people can also "jump" out of the primal mode and enter into an intellectual mode and abruptly into any other mode, e.g., simple, complex, cultural or primal. A person can shift from being intimidated by an animal such as a bull bison into teaching his or her child about the animal. What is guiding the person is shown in the primal / cultural and simple / complex model.

2. More advanced wildlife viewers, according to preliminary results, can switch from primal to complex and back again depending on the wildlife being viewed. Sometimes very experienced birdwatchers, for example, are content to simply identify a species while other respondents involve several attributes in the viewing experience.

3. It was found that some encounters require sensory modulation of a greater range, that is, there are different modalities required for an ecological understanding. Entry level wildlife viewers may not have their full range of emotions involved in a wildlife

encounter. For example, they more often than not ignore wildlife sounds involved in their wildlife encounter.

4. Some viewers form linkages with several attributes and place wildlife, e.g., moose, in a larger context. Their wildlife viewing experience is multidimensional,, linking a number of attributes together such as size / shape, ties to historical past and aggressive behavior.

5. New attributes of wildlife viewing were identified, including wildlife being close, aggressive behavior, wildlife being in control, size / shape and unspecified movement. These new attributes appear to be universal, regardless of respondent origin. This area requires further study.

6. It seems universal, regardless of origin, that few respondents mentioned sounds as a significant part of their wildlife encounter. Sight plays a much more prominent role than hearing. This area requires further study.

7. The data indicated that a negative experience, such as a bison walking through an occupied tent when a viewer was a teen, for example, can prevent development of that person into a more sophisticated wildlife viewer who incorporates a number of attributes into a wildlife encounter.

8. Preliminary data shows that there is no connection between education and the complexity of the wildlife encounter. Highly educated people sampled had simple memorable wildlife encounters as well as complex wildlife encounters or a combination of both. This area requires further study.

9. Some wildlife viewers will watch a great number of species but do not have a desire to incorporate a whole range of attributes into their encounter.

10. The input of knowledge about the specific environment being viewed will sometimes cause a wildlife viewer to move from simple to more complex wildlife encounters. This aspect requires further study.

11. It was discovered that some wildlife viewers, in search of a rare species, can sometimes be satisfied with a fleeting distant glimpse of that species. Other viewers will often require the wildlife to be close for the encounter to be considered memorable.

12. Results contradicted previous notions that the wildlife viewing experience varies according to the viewer's origin and/or race. Of the respondents sampled, this study showed that people from Hong Kong shared the same experience with primal encounters (e.g., aggressive bison) as did respondents from the USA. This requires further study.

13. Children ten years or younger, regardless of origin, tend to have relatively simple wildlife encounters that mostly involve the attributes wildlife being close, size / shape, aggressive behavior and movement.

14. The majority of respondents, regardless of origin, focused on the large animals. Results of this study support Soulé (1991) who concluded that an animal's salience or prominence is often proportional to size. This appears to be a universal phenomenon but requires further study.

15. It demonstrated that a memorable wildlife encounter is not dependent on the length of time the wildlife species is viewed. Someone who has only watched a Trumpeter swan for 30 seconds flying overhead can have an intense experience.

16. Results suggest that memorable wildlife encounters often occur with the participant still well-connected to his / her urban environment (for example, viewing wildlife from a car), while other encounters outside a car involve the viewer being totally absorbed in the

environment of the species (for example, hiking a trail). Sometimes wildlife viewers, because of unfamiliarity with a natural environment and fear of certain wildlife such as moose or bison, choose to experience the wildlife encounter from the safety of their urban environment and avoid experiencing wildlife in the backcountry.

17. It seems to be universal that a wildlife species has to be available for the wildlife encounter to be considered memorable. It is only through seeing the wildlife firsthand that a biophilic connection with wildlife can be formed. If a wildlife species is not available at the time of viewing, it is not considered a memorable wildlife encounter, even though the wildlife may be present a short distance away.

18. Data suggest that wildlife have the power to fully absorb the wildlife viewer and to form a connection with the viewer. Even when separated from wildlife by an automobile, viewers tend to become fully absorbed. Respondents indicated that in wildlife viewing, being in close to an animal developed a sense of intimacy with that animal. This supports the assumption of Katcher and Wilkins (1993) that certain stimuli, including wildlife, have strong therapeutic effects.

19. Results show that primal wildlife encounters tend to be short-lived, such as watching an aggressive coyote capture its prey.

20. Wildlife viewing opportunities that afford eye contact form a powerful wildlife viewing experience. Viewers that are able to focus on the eye of a wildlife species being viewed seem to be able to sense the emotions of the wildlife. This area requires further study.

21. It was demonstrated that small children, ten years or younger, tend to have relatively unsophisticated wildlife-viewing experiences that involve the attributes of wildlife being

close, size / shape, aggressive behavior and movement. With the input of knowledge, they are sometimes able to grasp some of the more complex attributes, such as the historical connection of the species to the past. A five-year-old child mentioned studying the role of bison in North American culture.

22. Results suggest that wildlife viewers, with small children more often than not, see the wildlife encounter through the eyes and expressions of their children. This supports the conclusions of Driver (1986) who indicated that personal benefits of wildlife viewing and other recreational opportunities include family intimacy.

23. It was shown that there is a powerful range of emotions elicited by memorable wildlife encounters. Some researchers have suggested that wildlife viewing and other forms of contact with wildlife are essential to human well being (McVay, 1993; Kellert & Wilson, 1993).

24. Data shows that the opportunity to share a wildlife encounter with a friend, spouse, relative or child increases the meaning of the wildlife encounter. The majority of respondents said it was important to share the wildlife encounter with someone else. This supports research by Driver (1986) who listed personal benefits of wildlife viewing as the sharing of similar values with others.

25. The relationship of wildlife to the respondent affects the wildlife encounter. For example, inner city children view Richardson ground squirrels as being a positive and beneficial addition to a picnic area. To farmers, however, they are viewed as being negative because their burrows may damage crops.

26. If a wildlife species is seen on a regular basis elsewhere, this sometimes can affect the wildlife encounter, causing it to no longer become memorable. For example, one

respondent mentioned seeing elk back home on a regular basis and therefore felt an experience with elk in EINP was not memorable.

27. Results showed that respondents sometimes draw comparisons between shapes and wildlife species. For example, the leech was compared to a snake.

Other Recommendations

In addition to contributing to research, this study makes various recommendations:

1. Further integration of the human dimensions of wildlife viewing needs to occur in protected area management.
2. Individual attributes from this study need to be researched in more detail.
3. Results need to be further confirmed using different sampling techniques and in other protected areas such as Jasper National Park, Canada or other areas where wildlife viewing is a large reason why visitors travel to the particular protected areas.
4. More study is required on how different interpretive strategies can benefit the wildlife viewer.
5. Universal truths, such as size / shape being part of a wildlife encounter regardless of a viewers' origin need further research.
6. Various cultural visitor groups, such as the Vietnamese who visited Elk Island, need to be studied further regarding wildlife encounters, to see if there are any differences among nationalities in memorable wildlife experiences.
7. Further examination of individual native species and their effect on the wildlife-viewing encounter needs to occur.

8. More universal truths regarding wildlife encounters need to be examined to determine if there are more similarities and differences between races.

Further recommendations are indicated in the discussion of limitations of this study in Chapter 2 (see pp.41 –43).

Recommendations for Wildlife Viewing in Elk Island

To implement the results of this study in enhancing the Elk Island wildlife viewing experience through the provision of information / interpretation, this study recommends:

1. A plan should be developed for wildlife users that is part of the Park Management Plan. This plan should contain pre trip, arrival, onsite information / interpretation and post trip information for the wildlife viewer.

2. The plan should also contain a variety of media recommendations that reflect the importance of the wildlife viewing attributes. Some of the media might include pretrip newspaper articles containing wildlife viewing opportunities, an orientation on arrival through an information attendant / interpreter, of wildlife opportunities available. An exhibit / pamphlet that is easily updated might also support the orientation efforts. Throughout the wildlife viewing effort roadside exhibits should be made available that provide more in-depth information on the species being viewed. At the end of the wildlife viewing experience, information should be provided that summarizes the wildlife

viewing experience and that encourages viewers to participate in other wildlife viewing opportunities.

3. A variety of media should be developed for the wildlife viewer at the end of the wildlife viewing experience, including a video that outlines the wildlife viewing attributes, pamphlets that give more in-depth descriptions on wildlife viewed and other handouts. These media could be presented to the wildlife viewer at the Interpretive Centre or could be items the visitor retains.

4. Volunteer groups such as the Friends of Elk Island Society should be encouraged to provide additional high quality souvenirs on wildlife viewing in order to provide positive "take home" memories.

5. Efforts should be continued to integrate the results of this study with ecosystem management in the park and to implement those interpretive / information aspects of wildlife viewing that are a positive benefit to the ecosystem integrity of the park. One of the principle goals of wildlife viewing in Elk Island should be to create an informed public that supports national park preservation goals.

Conclusions in Relation to Literature

Conclusions reached in this study are consistent with the literature review that showed future promise for both the management of visitor wildlife interactions and the delivery of an effective communications program for the wildlife viewer. There are also large gaps in the research, particularly in the area of interaction between wildlife and visitors in protected areas. This was further verified by McDiarmid, a researcher developing a study on visitor attitudes toward bears in Banff National Park, Alberta, Canada (personal communication, June, 1998).

More national parks are beginning to recognize the importance of wildlife viewers. It is in the best interests of Canada's National Parks to follow research suggestions for wildlife-visitor interactions and to incorporate wildlife viewing options into an expanded range of applications.

This study provides EINP with a framework for understanding its largest audience, the wildlife viewer. Increasingly, as more research unfolds, it is being suggested that the opportunity to observe wild species within their natural ecosystem is a central opportunity for park visitors.

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APPENDIX A

V4 Time of Interview

Value label	Value	Freq.	%	Valid %
Morning	1	86	21.4	21.7
Afternoon	2	242	60.2	61.1
Evening	3	68	16.9	17.2
Don't know / no response	9	6	1.5	--
	Total	402	100.0	100.0

Note. Valid cases: 396 (Valid means only those respondents who provided an answer.), No Answer: 6

APPENDIX B

V5 Location of Survey

Value label	Value	Freq.	%	Valid %
Astotin Recreation Area	1	121	30.1	30.5
Sandy Beach Campground	2	46	11.4	11.6
Interpretive Centre	3	72	17.9	18.1
Information Centre	4	22	5.5	5.5
Elk Island Parkway	5	90	22.4	22.8
North and/or South Gate	6	22	5.5	5.5
Elk Island golf course	7	24	6.0	6.0
Don't know / no response	9	5	1.2	--
	Total	402	100.0	100.0

Note. Valid cases: 397, No answer: 5

APPENDIX C

Table C1.

V11 Principal Occupation of Respondent

Value label	Value	Freq.	%	Valid %
Management	1	14	3.5	4.6
Business/finance/administration	2	14	3.5	4.6
Natural & applied sciences	3	30	7.5	9.9
Health occupations	4	8	2.0	2.6
Social science/education/government	5	48	11.9	15.8
Art/culture/recreation/sport	6	12	3.0	3.9
Sales & service	7	36	9.0	11.8
Trades/transport & equipment operators	8	16	4.0	5.3
Primary industry	9	26	6.5	8.6
Processing/manufacturing/utilities	10	10	2.5	3.3
Not working	98	90	22.2	29.6
Don't know / no response	99	98	24.4	--
	Total	402	100.0	100.0

Note. Valid cases: 304, No answer: 98

Table C2.

V6 Category of Respondent by V11 Principal Occupation of Respondent

	A	B	C	D	E	F	G	H	I	J	K	
Respondent	1	2	3	4	5	6	7	8	9	10	11	
Urban Albertan												
Frequency	8	2	16	8	32	12	12	12		10	22	134
Percentage	6	1.5	11.9	6.0	23.9	9.0	9.0	9.0		7.5	16.4	44.1
Rural Albertan												
Frequency		2	2		8			2	20		14	48
Percentage		4.2	4.2		16.7			4.2	41.7		29.2	15.8
Non Albertan												
Frequency	2	4	8		6		6		2		16	44
Percentage	4.5	9.1	18.2		13.6		13.6		4.5		36.4	14.5

(table continues)

Table C2. (continued)

	A	B	C	D	E	F	G	H	I	J	K	
Respondent	1	2	3	4	5	6	7	8	9	10	11	
School student												
Frequency											38	38
Percentage											100.0	12.5
Park employee												
Frequency	4	6	4		2		18	2	4			40
Percentage	10.0	15.0	10.0		5.0		45.0	5.0	10.0			13.1
Total frequency	14	14	30	8	48	12	36	16	26	10	90	304
Total percentage	4.6	4.6	9.9	2.6	15.8	3.9	11.8	5.3	8.6	3.3	29.6	100.0

Note. A: management, B: business/finance, C: natural & applied science, D: health occupations, E: social science/education/government, F: art/culture/recreation/sport, G: sales & service, H: trades/transport & equipment operators, I: primary industry, J: processing manufacturing, K: not working

APPENDIX D

Table D1.

V10 Principal Residence of Respondent

Value Label	Value	Freq.	%	Valid %
Edmonton	1	158	39.3	43.4
Fort Saskatchewan	2	38	9.5	10.4
Other Alberta	3	84	20.9	23.1
Other Canada	4	26	6.5	7.1
US	5	20	5.0	5.5
Europe	6	28	7.0	7.7
Other Foreign	7	10	2.5	2.8
Don't know / no response	9	38	9.3	--
	Total	402	100.0	100.0

Note. Valid cases: 364, No answer: 38

Table D2.

V6 Category of Respondent by V10 Principal Residence of Respondent

Respondent	A 1	B 2	C 3	D 4	E 5	F 6	G 7	Row Total
Urban Albertan								
Frequency	128	34	16					178
Percentage	71.9	19.1	9.0					48.9
Rural Albertan								
Frequency			56					56
Percentage			100.0					15.4
Non Albertan								
Frequency				26	20	28	10	84
Percentage				31.0	23.8	33.3	11.9	23.1
School student								
Frequency	30	4	6					40
Percentage	75.0	10.0	15.0					11.0
Park employee								
Frequency			6					6
Percentage			100.0					1.6
Total frequency	158	38	84	26	20	28	10	364
Total percentage	43.4	10.4	23.1	7.1	5.5	7.8	2.7	100.0

Note. A: Edmonton, B: Fort Saskatchewan, C: Other Alberta, D: Other Canada, E: US, F: Europe, G: Other Foreign

APPENDIX E

Table E1.

V7 Age of Respondent

Value label	Value	Freq.	%	Valid %
under 16	1	40	10.0	10.1
16-19	2	12	3.0	3.0
20-24	3	4	1.0	1.0
25-29	4	28	7.0	7.1
30-34	5	24	6.0	6.1
35-39	6	40	10.0	10.1
40-44	7	66	16.4	16.7
45-49	8	36	9.0	9.1
50-54	9	34	8.5	8.6
55-59	10	50	12.4	12.6
60-64	11	32	8.0	8.1
65-69	12	18	4.5	4.5

Table E2.

V6 Category of Respondent by V7 Age of Respondent

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Row
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Urban Albertan															
Frequency		4		12	14	20	42	24	18	18	10	10	2	4	178
Percentage		2.2		6.7	7.9	11.2	23.6	13.5	10.1	10.1	5.6	5.6	1.1	2.2	44.9
Rural Albertan															
Frequency		2	2		4		6	4	4	14	10	4	4	2	56
Percentage		3.6	3.6		7.1		10.7	7.1	7.1	25.0	17.9	7.1	7.1	3.6	14.3
Non Albertan															
Frequency	2		2	14	6	10	8	6	8	10	12	4			82
Percentage	2.4		2.4	17.1	7.3	12.2	9.8	7.3	9.8	12.2	14.6	4.9			20.7

(table continues)

Table E2. (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Row
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
School student															
Frequency	38	2													40
Percentage	95.0	5.0													10.1
Park employee															
Frequency		4		2		10	10	2	4	8					40
Percentage		10.0		5.0		25.0	25.0	5.0	10.0	20.0					10.0
Total frequency	40	12	4	28	24	40	66	36	34	50	32	18	6	6	396
Total percentage	10.1	3.0	1.0	7.1	6.1	10.1	16.7	9.1	8.6	12.6	8.1	4.5	1.5	1.5	100.0

Note. A: Under 16, B: 16-19, C: 20-24, D: 25-29, E: 30-34, F: 35-39, G: 40-44, H: 45-49, I: 50-54, J: 55-59, K: 60-64, L: 65-69, M: 70-74,

N: 75 and over

APPENDIX F

Table F1.

V8 Sex of Respondent

Value label	Value	Freq.	%	Valid %
Male	1	224	55.7	60.5
Female	2	146	36.3	39.5
Don't know / no response	9	32	8.0	--
	Total	402	100.0	100.0

Note. Valid cases 370, No answer 32

Table F2.

V6 Category of Respondent by V8 Sex of Respondent

	A	B	Row
Respondent	1	2	Total
Urban Albertan			
Frequency	114	62	176
Percentage	64.8	35.2	47.6
Rural Albertan			
Frequency	32	22	54
Percentage	59.3	40.7	14.6
Non Albertan			
Frequency	46	36	82
Percentage	56.1	43.9	22.2
School student			
Frequency	12	6	18
Percentage	66.7	33.3	4.9
Park employee			
Frequency	20	20	40
Percentage	50.0	50.0	10.7
Total frequency	224	146	370
Total percentage	60.5	39.5	100.0

Note. A: male, B: female

APPENDIX G

Table G1.

V9 Respondent's Use of EINP

Value label	Value	Freq.	%	Valid %
Day user	1	306	76.1	81.4
Overnight user	2	70	17.4	18.6
Don't know / no response	9	26	6.5	--
	Total	402	100.0	100.0

Note. Valid cases: 376, No answer: 26

Table G2.

V6 Category of Respondent by V9 Respondent's Use of EINP

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	144	36	180
Percentage	80.0	20.0	47.9
Rural Albertan			
Frequency	50	6	56
Percentage	89.3	10.7	14.9
Non Albertan			
Frequency	56	28	84
Percentage	66.7	33.3	22.3
School student			
Frequency	40		40
Percentage	100.0		10.6
Park employee			
Frequency	16		16
Percentage	100.0		4.3
Total frequency	306	70	376
Total percentage	81.4	18.6	100.0

Note. A: day user, B: overnight user

APPENDIX H

V6 Category of Respondent

Value label	Value	Freq.	%	Valid %
Urban Albertan	1	182	45.3	45.3
Rural Albertan	2	56	13.9	13.9
Non Albertan	3	84	20.8	20.8
School student	4	40	10.0	10.0
Park employee	5	40	10.0	10.0
	Total	402	100.0	100.0

Note. Valid cases: 402, No answer: 0

APPENDIX I

Table I1.

V12 Question 1: Time Spent in EINP

Value label	Value	Freq.	%	Valid %
1 - 3 hours	2	112	27.9	30.8
3 - 5 hours	3	106	26.4	29.1
> 5 hours, not overnight	4	64	15.9	17.6
Overnight	5	82	20.3	22.5
Don't know / no response	9	38	9.5	--
	Total	402	100	100

Note. Valid cases: 364. No answer: 38

Table I2.

V6 Category of Respondent by V12 Question 1: Time Spent in EINP

Respondent	A 2	B 3	C 4	D 5	Row Total
Urban Albertan					
Frequency	62	50	18	38	168
Percentage	36.9	29.8	10.7	22.6	46.2
Rural Albertan					
Frequency	26	14	6	10	56
Percentage	46.4	25.0	10.7	17.9	15.4
Non Albertan					
Frequency	18	16	16	34	84
Percentage	21.4	19.0	19.0	40.5	23.0
School student					
Frequency	4	24	12		40
Percentage	10.0	60.0	30.0		11.0
Park employee					
Frequency	2	2	12		16
Percentage	12.5	12.5	75.0		4.4
Total frequency	112	106	64	82	364
Total percentage	30.8	29.1	17.6	22.5	100.0

Note. A: 1-3 hrs., B: 3-5 hrs., C: > 5 hrs. (not overnight), D: overnight

APPENDIX J

Table J1.

V13 Reason for Coming to EINP Question 2: First Reason Mentioned

Value label	Value	Freq.	%	Valid %
By accident	1	2	0.5	0.5
To see large animals	2	226	56.2	57.1
To birdwatch	3	26	6.5	6.6
To enjoy scenery; relax	4	24	6.0	6.1
To picnic	5	12	3.0	3.0
To camp	6	8	2.0	2.0
To golf	7	24	6.0	6.1
To boat or windsurf	8	10	2.5	2.5
To attend interpretive programs	9	20	5.0	5.1
To walk a trail/hike	10	6	1.5	1.5
To show park to others	11	8	2.0	2.0
Other	98	30	7.3	7.5
Don't know / no response	99	6	1.5	--
	Total	402	100.0	100.0

Note. Valid cases: 198, No answer: 3

Table J2.

V6 Category of Respondent by V13 Question 2: Reason One for Coming to EINP

	A	B	C	D	E	F	G	H	I	J	K	L	Row
Respondent	1	2	3	4	5	6	7	8	9	10	11	98	Total
Urban Albertan													
Frequency		88	12	18	10	8	18	8	2	2	2	10	178
Percentage		49.4	6.7	10.1	5.6	4.5	10.1	4.5	1.1	1.1	1.1	5.6	44.9
Rural Albertan													
Frequency		28	8	4			6	2			6	2	56
Percentage		50.0	14.3	7.1			10.7	3.6			10.7	3.6	14.1
Non Albertan													
Frequency	2	74	6									2	84
Percentage	2.4	88.1	7.1									2.4	21.2

(table continues)

Table J2. (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	Row
Respondent	1	2	3	4	5	6	7	8	9	10	11	98	Total
School student													
Frequency		10							18	4		8	40
Percentage		25.0							45.0	10.0		20.0	10.1
Park employee													
Frequency		26		2	2							8	38
Percentage		68.4		5.3	5.3							21.2	9.7
Total frequency	1	226	26	24	6	8	24	10	20	6	8	30	396
Total percentage	0.5	57.1	6.6	6.1	3.0	2.0	6.1	2.4	5.1	1.5	2.0	7.6	100.0

Note. A: by accident, B: to see large animals, C: to birdwatch, D: to enjoy scenery; relax, E: to picnic, F: to camp, G: to golf, H: to boat or windsurf, I: to attend interpretive programs J: to walk a trail/hike, K: to show park to others, L: other

APPENDIX K

Table K1.

V16 Question 3: Reason for Existence of EINP

Value label	Value	Freq.	%	Valid %
Ecological	1	242	60.1	74.7
Recreational	2	38	9.5	11.7
Both	3	40	10.0	12.4
Other	8	4	1.0	1.2
Don't know / no response	9	78	19.4	--
	Total	402	100	100

Note. Valid cases: 324. No answer: 78

Table K2.

V6 Category of Respondent by V16 Question 3: Reason for Existence of EINP

Respondent	A 2	B 3	C 4	D 5	Row Total
Urban Albertan					
Frequency	104	22	18	4	148
Percentage	70.3	14.9	12.2	2.7	45.7
Rural Albertan					
Frequency	32	8	8		48
Percentage	66.7	16.7	16.7		14.8
Non Albertan					
Frequency	66		4		70
Percentage	94.3		5.7		21.6
School student					
Frequency	30	4	2		36
Percentage	83.3	11.1	5.6		11.1
Park employee					
Frequency	10	4	8		22
Percentage	45.5	18.2	36.4		6.8
Total frequency	242	38	40	4	324
Total percentage	74.7	11.7	12.4	1.2	100.0

Note. A: ecological, B: recreational, C: both, D: other

APPENDIX L

Table L1.

V17 Question 4: Wildlife Viewing Main Reason for Coming

Value label	Value	Freq.	%	Valid %
Yes	1	264	65.7	76.3
No	2	82	20.4	23.7
Don't know / no response	9	56	13.9	--
	Total	402	100.0	100.0

Note. Valid cases: 346, No answer: 56

Table L2.

V6 Category of Respondent by V17 Question 4: Wildlife Viewing Main Reason for Coming

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	120	40	160
Percentage		25.0	46.2
Rural Albertan			
Frequency	38	12	50
Percentage	76.0	24.0	14.5
Non Albertan			
Frequency	66	6	72
Percentage	91.7	8.3	20.8
School student			
Frequency	20	16	36
Percentage	55.6	44.4	10.4
Park employee			
Frequency	20	8	28
Percentage	71.4	28.6	8.1
Total frequency	264	82	346
Total percentage	76.3	23.7	100.0

Note. A: yes, B: no

APPENDIX M

V6 Category of Respondent by Question 5: Most Memorable Wildlife Encounter

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Respondent	11	12	13	14	15	16	19	21	22	23	24	25	26	28
Urban Albertan														
Frequency	84	6	28	8	8	6	10	4	4	4	2	2	4	18
Percentage	59.2	4.2	19.7	5.6	5.6	4.2	7.0	2.8	2.8	2.8	1.4	1.4	2.8	12.7
Rural Albertan														
Frequency	30	4		2			2		2		4	2		4
Percentage	62.5	8.3		4.2			4.2		4.2		8.3	4.2		8.3
Non Albertan														
Frequency	50	2	8		2	2	6			4		2		6
Percentage	78.1	3.1	12.5		3.1	3.1	9.4			6.3		3.1		9.4

(table continues)

Table M1. (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Respondent	11	12	13	14	15	16	19	21	22	23	24	25	26	28
School student														
Frequency	22	2	4				20					2		
Percentage	64.7	5.9	11.8				58.8					5.9		
Park employee														
Frequency	24	2	10				2							
Percentage	75.0	6.3	31.3				6.3							
Total frequency	210	16	50	10	10	8	40	4	6	8	6	8	4	28
Total percentage	65.6	5.0	15.6	3.1	3.1	2.5	12.5	1.3	1.9	2.5	1.9	2.5	1.3	8.8

(table continues)

Table M1. (continued)

	O	P	Q	R	S	T	U	V	W	X	Y	Z	C27	C28
Respondent	29	31	32	33	41	42	43	52	62	63	64	65	97	
Urban Albertan														
Frequency	4	14	2	10	2	12	2	6			2	2	2	142
Percentage	2.8	9.9	1.4	7.0	1.4	8.5	1.4	4.2			1.4	1.4	1.4	44.4
Rural Albertan														
Frequency		2	4			4		4		2		4	4	48
Percentage		4.2	8.3			8.3		8.3		4.2		8.3	8.3	15.0
Non Albertan														
Frequency	4	4	2			10	4	2			2			64
Percentage	6.3	6.3	3.1			15.6	6.3	3.1			3.1			20.0

(table continues)

Table M1. (continued)

	O	P	Q	R	S	T	U	V	W	X	Y	Z	C27	C28
Respondent	29	31	32	33	41	42	43	52	62	63	64	65	97	
School student														
Frequency		8	4			4			2	2				34
Percentage		23.5	11.8			11.8			5.9	5.9				10.6
Park Employee														
Frequency		4	4	2	2	4		2					2	32
Percentage		12.5	12.5	6.3	6.3	12.5		6.3					6.3	10.0
Total frequency	8	32	16	12	4	34	6	14	2	4	4	6	8	320
Total percentage	2.5	10.0	5.0	3.8	1.3	10.6	1.9	4.4	0.6	1.3	1.3	1.9	2.5	100

Note. Percentages and totals based on respondents: 320 Valid cases, 82 No answer

A	Plains bison	P	Aggressive behavior of wildlife
B	Manitoba elk	Q	Size or Shape of wildlife important
C	Moose	R	Wildlife in control or command
D	White-tailed deer	S	Availability of a particular species
E	Coyote	T	Being close to wildlife
F	Beaver	U	Rarity of wildlife
G	Other non bird species	V	Presence of children
H	American white pelicans	W	Species is endangered
I	Common loons	X	Species is historically important
J	Red necked grebes	Y	Species is perceived to be free
K	Woodpeckers	Z	Maternal/paternal behavior
L	Trumpeter/tundra swans	C27	DK/NA
M	Red tailed hawks	C28	Row total
N	Other birds		
O	All species		

APPENDIX N

Table N1.

V6 Category of Respondent by Question 6: Why Wildlife Encounter so Important

	A	B	C	D	E	F	G	H	I	J	K	L	M
Respondent	11	12	13	14	15	16	19	21	22	23	25	28	29
Urban Albertan													
Frequency	54	4	8		2	4		6	6	2		8	
Percentage	44.3	3.3	6.6		1.6	3.3		4.9	4.9	1.6		6.6	
Rural Albertan													
Frequency	20	2		2							2	6	2
Percentage	50.0	5.0		5.0							5.0	15.0	5.0

(table continues)

Table N1. (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M
Respondent	11	12	13	14	15	16	19	21	22	23	25	28	29
Non Albertan													
Frequency	32	2	2			2					2	4	
Percentage	552	3.4	3.4			3.4					3.4	6.9	
School student													
Frequency	14		4				4						
Percentage	50.0		14.3				14.						
Park employee													
Frequency	16		2										
Percentage	80.0		10.0										
Total frequency	136	8	16	2	2	6	4	6	6	2	4	18	2
Total percentage	50.7	3.0	6.0	0.7	0.7	2.2	1.5	2.2	2.2	0.7	1.5	6.7	0.7

(table continues)

Table N1. (continued)

	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Respondent	31	32	33	34	39	41	42	43	44	51	52	53	55
Urban Albertan													
Frequency	14	16	4		2	6	20	12	2	8	14	2	
Percentage	11.5	13.1	3.3		1.6	4.9	16.4	9.8	1.6	6.6	11.5	1.6	
Rural Albertan													
Frequency	6	2				2	4	2		2	2		2
Percentage	15.0	5.0				5.0	10.0	5.0		5.0	5.0		5.0
Non Albertan													
Frequency	4	12				2	10	18					
Percentage	6.9	20.7				3.4	17.2	31.0					
School student													
Frequency	6	6	2	2		2	8						
Percentage	21.4	21.4	7.1	7.1		7.1	28.6						

(table continues)

Table N1. (continued)

	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Respondent	31	32	33	34	39	41	42	43	44	51	52	53	55
Park employee													
Frequency	4	6				2	2	2			2		
Percentage	20.0	30.0				10.0	10.0	10.0			10.0		
Total frequency	34	42	6	2	2	14	44	34	2	10	18	2	2
Total percentage	12.7	15.7	2.2	0.7	0.7	5.2	16.4	12.7	0.7	3.7	6.7	0.7	0.7

Table N1 note. Wildlife species mentioned during encounter

A	Plains bison
B	Manitoba elk
C	Moose
D	White-tailed deer
E	Coyote
F	Beaver
G	Other non bird species
H	American white pelicans
I	Common loons
J	Red-necked grebes
K	Trumpeter/tundra swans
L	Other birds
M	All species

Wildlife attributes mentioned during encounter

N	Aggressive behavior of wildlife
O	Size or shape of wildlife important
P	Wildlife exerting control over people
Q	Unspecified animal movement(fast)
R	Unspecified response
S	Availability of wildlife
T	Closeness to wildlife
U	Rarity of wildlife
V	Unspecified response
W	Presence of others enhances viewing
X	Presence of children enhances viewing
Y	Experience stillness / solitude / isolation
Z	Unspecified response

Table N2.

V6 Category of Respondent by Question 6: Why Wildlife Encounter so Important

	C29	C30	C31	C32	C33	C34	C35	row
Respondent	61	62	63	64	65	66	97	total
Urban Albertan								
Frequency	30		2	8	2	2		122
Percentage	24.6		1.6	6.6	1.6	1.6		45.5
Rural Albertan								
Frequency	6	2	4	10		2	2	40
Percentage	15.0	5.0	10.0	25.0		5.0	5.0	14.9
Non Albertan								
Frequency	6		4	12				58
Percentage	10.3		6.9	20.7				21.6
School student								
Frequency	6		2	2	2			28
Percentage	21.4		7.1	7.1	7.1			10.5
Park employee								
Frequency	4							20
Percentage	20.0							7.5
Total frequency	52	2	12	32	4	4	2	268
Total percentage	19.4	0.7	4.5	11.9	1.5	1.5	0.7	100.0

Note. Percentages and totals based on respondents: 268 valid cases, 134 missing cases

C29	Element of surprise	C32	Species in natural environment (free)
C30	Species is endangered	C33	Maternal / paternal behavior
C31	Species is important historically	C34	Animal is cared for
		C35	DK/NA

APPENDIX O

Table O1.

V6 Category of Respondent by Question 7: Define Most Memorable Wildlife Encounter

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Respondent	11	12	13	14	15	16	19	22	23	24	28	29	31	32	34
Urban Albertan															
Frequency	36	4	6	4	4	2	4	6	2		4	2	14	2	2
Percentage	31.0	3.4	5.2	3.4	3.4	1.7	3.4	5.2	1.7		3.4	1.7	12.1	1.7	1.7
Rural Albertan															
Frequency	12		2							2	8	8	6		
Percentage	31.6		5.1							5.1	20.5	20.5	15.4		
Non Albertan															
Frequency	18	4	4				2				4			4	
Percentage	32.7	7.3	7.3				3.6				7.3			7.3	

(table continues)

Table O1. (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Respondent	11	12	13	14	15	16	19	22	23	24	28	29	31	32	34
School student															
Frequency		2	4			2	2						4	10	4
Percentage		8.3	16.7			8.3	8.3						16.7	41.7	16.7
Park employee															
Frequency	2		2											2	
Percentage	16.7		16.7											16.7	
Total frequency	68	10	18	4	4	4	8	6.	2	2	16	10	24	18	6
Total percentage	27.6	4.1	7.3	1.6	1.6	1.6	3.3	2.4	.8	.8	6.5	4.1	9.8	7.3	2.4

(table continues)

Table O1. (continued)

	P	Q	R	S	T	U	V	W	X	Y	Z	C27	C28	C29
Respondent	41	42	43	44	45	51	52	53	54	61	63	64	65	
Urban Albertan														
Frequency	2	26	10	2	2	4	11	4		38		20	2	116
Percentage	1.7	22.4	8.6	1.7	1.7	3.4	9.5	3.4		32.8		17.2	1.7	47.2
Rural Albertan														
Frequency		4	4				2		2	14		7	2	39
Percentage		10.3	10.3				5.1		5.1	35.9		17.9	5.1	15.9
Non Albertan														
Frequency	4	11					2			22	2	21	2	55
Percentage	7.3	20.0					3.6			40.0	3.6	38.2	3.6	22.4
School student														
Frequency		8	2							10		4	2	24
Percentage		33.3	8.3							41.7		16.7	8.3	9.8

(table continues)

Table O1. (continued)

	P	Q	R	S	T	U	V	W	X	Y	Z	C27	C28	C29
Respondent	41	42	43	44	45	51	52	53	54	61	63	64	65	
Park employee														
Frequency		4					2			2	2			12
Percentage		33.3					16.7			16.7	16.7			4.9
Total frequency	6	53	16	1	2	4	17	4	2	86	4	52	8	246
Total percentage	2.4	21.5	6.5	.8	.8	1.6	6.9	1.6	.8	35.0	1.6	21.1	3.3	100.0

Table O1 note. Percentages and totals based on respondents: 246 valid cases, 156 no answer

Wildlife species mentioned during encounter		Wildlife attributes mentioned during encounter			
A	Plains bison	M	Aggressive behavior of wildlife	Y	Element of surprise
B	Manitoba elk	N	Size or shape of wildlife important	Z	Species important for historical reasons
C	Moose	O	Unspecified animal movement	C27	Perception that species is free
D	White-tailed deer	P	Availability of species	C28	Maternal/paternal behavior
E	Coyote	Q	Closeness to wildlife	C29	Row totals
F	Beaver	R	Rarity of wildlife		
G	Other non-bird species	S	Unspecified response		
H	Common loons	T	Quantity of wildlife important		
I	Red-necked grebes	U	Presence of others enhances wildlife experience		
J	Woodpeckers	V	Presence of children enhances viewing		
K	Other birds	W	Experience of stillness		
L	All species	X	Coming to the park at a certain time		

APPENDIX P

Table P1.

V27 Question 8: Favorite Wildlife Species in EINP

Value label	Value	Freq.	%	Valid %
Bison	1	158	39.1	56.0
Manitoba elk	2	14	3.5	5.0
Moose	3	20	5.0	7.1
Beaver	4	4	1.0	1.4
Other animal (non-bird)	5	16	4.0	5.7
Other unspecified (non-bird)	6	8	2.0	2.8
Bird	8	10	2.5	3.5
Bird unspecified	9	24	6.0	8.6
No preference	98	28	7.0	9.9
Don't know / no response	99	120	29.9	--
Total	402	100	100	100

Note. Valid cases: 262, No answer: 120

Table P2.

V6 Category of Respondent by V27 Question 8: Favorite Wildlife Species in EINP

	A	B	C	D	E	F	G	H	I	Row
Respondent	1	2	3	4	5	6	8	9	98	Total
Urban Albertan										
Frequency	74	6	10	4	4	4	4	12	12	130
Percentage	56.9	4.6	7.7	3.1	3.1	3.1	3.1	9.2	9.2	46.1
Rural Albertan										
Frequency	22	4	2		4		2	4	6	44
Percentage	50.0	9.1	4.5		9.1		4.5	9.1	13.6	15.6
Non Albertan										
Frequency	40	2	6			4	4	8	4	68
Percentage	58.8	2.9	8.8			5.9	5.9	11.8	5.9	24.1
School student										
Frequency	12				6					18
Percentage	66.7				33.3					6.3
Park employee										
Frequency	10	2	2		2				6	22
Percentage	45.5	9.1	9.1		9.1				27.3	7.9
Total frequency	158	14	20	4	16	8	10	24	28	282
Total percentage	56.0	5.0	7.1	1.4	5.8	2.8	3.5	8.5	9.9	100.0

Note. A: bison, B: elk, C: moose, D: beaver, E: other animal (non-bird).

F: other unspecified (non-bird), G: bird, H: bird unspecified, I: no preference

APPENDIX Q

Table Q1.

V30 Question 9: Special Trips to EINP To See Wildlife

Value label	Value	Freq.	%	Valid %
Yes	1	244	60.7	89.7
No	2	28	7.0	10.3
Don't know / no response	9	130	32.3	--
	Total	402	100.0	100.0

Note. Valid cases: 272, No answer: 130

Table Q2.

V6 Category of Respondent by V30 Question 9: Special Trips to EINP to See Wildlife

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	116	16	132
Percentage	87.9	12.1	48.5
Rural Albertan			
Frequency	38	2	40
Percentage	95.0	5.0	14.7
Non Albertan			
Frequency	58	6	64
Percentage	90.6	9.4	23.5
School student			
Frequency	16	2	18
Percentage	88.9	11.1	6.7
Park employee			
Frequency	16	2	18
Percentage	88.9	11.1	6.6
Total frequency	244	28	272
Total percentage	89.7	10.3	100.0

Note. A: yes, B: no

APPENDIX R

Table R1.

V31 Question 10: Importance of Meeting Wildlife in EINP

Value label	Value	Freq.	%	Valid %
Very unimportant	1	2	0.5	0.7
Unimportant	2	6	1.5	2.2
Important	4	28	7.0	10.3
Very important	5	236	58.7	86.8
Don't know / no response	9	130	32.3	--
Total		402	100.0	100.0

Note. Valid cases: 272, No answer: 130

Table R2.

V6 Category of Respondent by V31 Question 10: Importance of Meeting Wildlife in EINP

Respondent	A 1	B 2	C 4	D 5	Row Total
Urban Albertan					
Frequency		2	22	104	128
Percentage		1.6	17.2	81.3	47.1
Rural Albertan					
Frequency	2		2	36	40
Percentage	5.0		5.0	90.0	14.7
Non Albertan					
Frequency			4	62	66
Percentage			6.1	93.9	24.1
School student					
Frequency				20	20
Percentage				100.0	7.4
Park employee					
Frequency		4		14	18
Percentage		22.2		77.8	6.7
Total frequency	2	6	28	236	272
Total percentage	0.7	2.2	10.3	86.8	100.0

Note. A: unimportant, B: very unimportant, C: important, D: very important

APPENDIX S

Table S1.

V32 Question 11: Whether Anyone With Respondent

Value label	Value	Freq.	%	Valid %
Yes	1	224	55.7	85.5
No	2	38	9.5	14.5
Don't know / no response	9	140	34.8	--
	Total	402	100.0	100.0

Note. Valid cases: 262, No answer: 140

Table S2.

V32 Category of Respondent by V32 Question 11: Whether Anyone With Respondent

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	106	20	126
Percentage	84.1	15.9	48.1
Rural Albertan			
Frequency	32	10	42
Percentage	76.2	23.8	16.0
Non Albertan			
Frequency	52	8	60
Percentage	86.7	13.3	22.9
School student			
Frequency	18		18
Percentage	100.0		6.9
Park employee			
Frequency	16		16
Percentage	100.0		6.1
Total frequency	224	38	262
Total percentage	85.5	14.5	100.0

Note. A: yes, B: no

APPENDIX T

Table T1.

V33 Question 12: Importance of Sharing Wildlife Encounter

Value label	Value	Freq.	%	Valid %
Yes	1	200	49.8	81.3
No	2	46	11.4	18.7
Don't know / no response	9	156	38.8	--
	Total	402	100.0	100.0

Note. Valid cases: 246, No answer: 156

Table T2.

V6 Category of Respondent by V33 Question 12: Importance of Sharing Wildlife Encounter

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	94	24	118
Percentage	79.7	20.3	48.0
Rural Albertan			
Frequency	34	10	44
Percentage	77.3	22.7	17.9
Non Albertan			
Frequency	40	10	50
Percentage	80.0	20.0	20.3
School student			
Frequency	18		18
Percentage	100.0		7.3
Park employee			
Frequency	14	2	16
Percentage	87.5	12.5	6.5
Total frequency	200	46	246
Total percentage	81.3	18.7	100.0

Note. A: yes, B: no

APPENDIX U

V6 Category of Respondent by Question 13: Was It Something Wildlife Was Doing That Made It Your Most Memorable Encounter?

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Respondent	11	12	13	14	15	21	22	23	24	25	26	27	28	31
Urban Albertan														
Frequency	2	2	2		4	8	2	2	2	2	2	2	30	14
Percentage	2.1	2.1	2.1		4.2	8.3	2.1	2.1	2.1	2.1	2.1	2.1	31.3	14.6
Rural Albertan														
Frequency				2									10	4
Percentage				8.3									41.7	16.7
Non Albertan														
Frequency	2			2	4		4	2		2			12	20
Percentage	3.8			3.8	7.7		7.7	3.8		3.8			23.1	38.5

(table continues)

Table U1. (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Respondent	11	12	13	14	15	21	22	23	24	25	26	27	28	31
School student														
Frequency		4			2					2			2	
Percentage		33.3			16.7					16.7			16.7	
Park Employee														
Frequency													4	
Percentage													33.3	
Total frequency	4	6	2	4	10	8	6	4	2	6	2	2	58	38
Total percentage	2.0	3.1	1.0	2.0	5.1	4.1	3.1	2.0	1.0	3.1	1.0	1.0	29.6	19.4

(table continues)

Table U1. (continued)

	O	P	Q	R	S	T	U	V	W	X	Y	Z	C27	Total
Respondent	32	33	34	35	41	42	44	45	51	52	53	54	55	
Urban Albertan														
Frequency	4	2	2	2	6		4		28	4	2	2	10	96
Percentage	4.2	2.1	2.1	2.1	6.3		4.2		29.2	4.2	2.1	2.1	10.4	49.0
Rural Albertan														
Frequency	2				2	2	2		3					24
Percentage	8.3				8.3	8.3	8.3		12.5					12.2
Non Albertan														
Frequency				2	4	2		2	9					52
Percentage				3.8	7.7	3.8		3.8	17.3					26.5
School student														
Frequency						2	2		2				8	12
Percentage						16.7	16.7		16.7				66.7	6.1

(table continues)

Table U1. (continued)

	O	P	Q	R	S	T	U	V	W	X	Y	Z	C27	Total
Respondent	32	33	34	35	41	42	44	45	51	52	53	54	55	
Park Employee														
Frequency					2			2	4		2			12
Percentage					16.7			16.7	33.3		16.7			6.1
Total frequency	6	2	2	4	14	6	8	4	46	4	4	2	18	196
Total percentage	3.1	1.0	1.0	2.0	7.1	3.1	4.1	2.0	23.5	2.0	2.0	1.0	9.2	100.0

Table U1. note. Percentages and totals based on respondents: 196 valid cases, 206: no answer

Wildlife Attributes or Characteristics Mentioned:

A	Animal was fighting	L	Non-specific mention of animal presence, behavior or movement
B	Predator / prey relationship	M	DK/NA
C	Threat / personal danger	N	Animal is in a natural state / habitat / being free or in the wild
D	Aggressive behavior of wildlife	O	Animal is peaceful / tranquil
E	Wildlife exerting control over people / wildlife in command	P	Feeling of invasion in the presence of wildlife/being in their territory
F	Running	Q	Animal was caring for its young / being maternal/paternal
G	Swimming / in the water	R	Sounds of animal/nature important
H	Eating	S	Closeness to wildlife
I	Sleeping	T	Size / shape / general appearance of wildlife important
J	Gathering in herds / interacting with other species members	U	Element of surprise / unexpected /unusual /novelty
K	Coming down / climbing a tree	V	Species is rare or important for historical reasons/represents ties to past

---

Wildlife Species Mentioned:

W	Bison	Y	Moose	C27	Other (cormorant, coyote, ground squirrel, leech, porcupine, tree squirrel)
X	Elk	Z	Beaver		

APPENDIX V

Table V1.

V37 Question 14:Where Wildlife Encounter Happened

Value Label	Value	Freq.	%	Valid %
Bison paddock	1	34	8.5	13.1
Elk Island parkway	2	152	37.8	58.5
Recreation area	3	42	10.4	16.2
Other	8	32	8.0	12.2
Don't know / no response	9	142	35.3	--
	Total	402	100.0	100.0

Note. Valid cases: 260, No answer: 142

Table V2.

V6 Category of Respondent by V37 Question 14: Where Wildlife Encounter Happened

Respondent	A 1	B 2	C 3	D 4	Row Total
Urban Albertan					
Frequency	12	70	24	14	120
Percentage	10.0	58.3	20.0	11.7	46.2
Rural Albertan					
Frequency	2	30	2	8	42
Percentage	4.8	71.4	4.8	19.0	16.2
Non Albertan					
Frequency	8	38	6	8	60
Percentage	13.3	63.0	10.0	13.3	23.1
School student					
Frequency	4	6	10		20
Percentage	20.0	30.0	50.0		7.7
Park employee					
Frequency	8	8		2	18
Percentage	44.4	44.4		11.2	6.8
Total frequency	34	152	42	32	260
Total percentage	13.1	58.5	16.2	12.2	100.0

Note. A: bison paddock, B: Elk Island parkway, C: recreation area, D: other

APPENDIX W

Table W1.

V38 Question 15: Whether Encounter Happened in Car

Value label	Value	Freq.	%	Valid %
Yes	1	156	38.8	62.4
No	2	94	23.4	37.6
Don't know / no response	9	152	37.8	--
	Total	402	100.0	100.0

Note. Valid cases: 250, No answer: 152

Table W2.

V6 Category of Respondent by V38 Question15: Whether Encounter Happened in Car

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	68	50	118
Percentage	57.6	42.4	47.2
Rural Albertan			
Frequency	26	14	40
Percentage	65.0	35.0	16.0
Non Alberta			
Frequency	44	12	56
Percentage	78.6	21.4	22.4
School student			
Frequency	4	16	20
Percentage	20.0	80.0	8.0
Park employee			
Frequency	14	2	16
Percentage	87.5	12.5	6.4
Total frequency	156	94	250
Total percentage	62.4	37.6	100.0

Note. A: yes, B: no

APPENDIX X

Table X1.

V39 Question 16: Times per Year Respondent Comes to ENIP

Value Label	Value	Freq.	%	Valid %
once	1	106	26.4	44.2
twice	2	30	7.5	12.5
three times	3	16	4.0	6.7
more than 3 times	4	88	21.8	36.6
Don't know / no response	9	162	40.3	--
	Total	402	100.0	100.0

Note. Valid cases: 240. No answer: 162

Table X2.

V6 Category of Respondent by V39 Question 16: Times per Year Respondent Comes to ENIP

Respondent	A 1	B 2	C 3	D 4	Row Total
Urban Albertan					
Frequency	24	20	10	56	110
Percentage	21.8	18.2	9.1	50.9	45.8
Rural Albertan					
Frequency	8	8	4	22	42
Percentage	19.0	19.0	9.5	52.4	17.5
Non Albertan					
Frequency	62	2			64
Percentage	96.9	3.1			26.7
School student					
Frequency	10			2	12
Percentage	83.3			16.7	5.0
Park employee					
Frequency	2		2	8	12
Percentage	16.7		16.7	66.7	5.0
Total frequency	106	30	16	88	240
Total percentage	44.2	12.5	6.7	36.6	100.0

Note. A: once, B: twice, C: three times, D: more than 3 times

APPENDIX Y

Table Y1.

V40 Question 17: Presence of Favorite Wildlife Sound

Value label	Value	Freq.	%	Valid %
Yes	1	100	24.9	45.0
No	2	122	30.3	55.0
Don't know / no response	9	180	44.8	--
	Total	402	100.0	100.0

Note. Valid cases: 222, No answer: 180

Table Y2.

V6 Category of Respondent by V40 Question 17: Presence of Favorite Wildlife Sound

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	56	50	106
Percentage	52.8	47.2	47.7
Rural Albertan			
Frequency	13	18	31
Percentage	41.9	58.1	14.0
Non Albertan			
Frequency	23	38	61
Percentage	37.7	62.3	27.5
School student			
Frequency	2	8	10
Percentage	20.0	80.0	4.5
Park employee			
Frequency	6	8	14
Percentage	42.9	57.1	6.3
Total frequency	100	122	222
Total percentage	45.0	55.0	100.0

Note. A: yes, B: no

APPENDIX Z

Table Z1.

V41 Question 18: Sound Respondent Would Most Like to Hear

Value label	Value	Freq.	%	Valid %
Common loon	1	64	15.9	58.2
Red-necked grebe	2	2	0.5	1.8
Manitoba elk	3	8	2.0	7.3
Coyote	4	8	2.0	7.3
Other	8	28	7.0	25.4
Don't know / no response	9	292	72.6	--
	Total	402	100.0	100.0

Note. Valid cases: 110. No answer: 292

Table Z2.

V6 Category of Respondent by V41 Question 18: Sound Respondent Would Most Like to Hear

	A	B	C	D	E	Row
Respondent	1	2	3	4	8	Total
Urban Albertan						
Frequency	45	2	4	4	9	64
Percentage	70.3	3.1	6.3	6.3	14.1	58.2
Rural Albertan						
Frequency	4			2	6	12
Percentage	33.3			16.7	50.0	10.9
Non Albertan						
Frequency	13		2	2	5	22
Percentage	59.1		9.1	9.1	22.7	20.0
School student						
Frequency					4	4
Percentage					100.0	3.6
Park employee						
Frequency	2		2		4	8
Percentage	25.0		25.0		50.0	7.3
Total frequency	64	2	8	8	28	110
Total percentage	58.2	1.8	7.3	7.3	25.4	100.0

Note. A: Common loon, B: Red-necked grebe, C: Manitoba elk, D: coyote, E: other

APPENDIX AA

Table AA1.

V42 Question 19: Favorite Season for Viewing Wildlife

Value label	Value	Freq.	%	Valid %
Spring	1	22	5.5	9.7
Summer	2	86	21.4	38.1
Fall	3	26	6.5	11.5
Winter	4	6	1.5	2.7
No pref. / > 1 season	8	86	21.3	38.0
Don't know / no response	9	176	43.8	--
	Total	402	100.0	100.0

Note. Valid cases: 226, No answer, 176

Table AA2.

V6 Category of Respondent by V42 Question 19: Favorite Season for Viewing Wildlife

	A	B	C	D	E	Row
Respondent	1	2	3	4	8	Total
Urban Albertan						
Frequency	4	40	12	2	52	110
Percentage	3.6	36.4	10.9	1.8	47.3	48.8
Rural Albertan						
Frequency	4	8	6	4	12	34
Percentage	11.8	23.5	17.6	11.8	35.3	15.1
Non Albertan						
Frequency	4	34	4		18	60
Percentage	6.7	56.7	6.7		30.0	26.6
School student						
Frequency	10				2	12
Percentage	83.3				16.7	5.5
Park employee						
Frequency		4	4		2	10
Percentage		40.0	40.0		20.0	
Total frequency	22	86	26	6	86	226
Total percentage	9.7	38.1	11.4	2.7	38.1	100.0

Note. A: spring, B: summer, C: fall, D: winter, E: no preference or greater than one season

APPENDIX AB

Table AB1.

V43 Question 20: Activity While Seeing Wildlife (Outside of a Car)

Value label	Value	Freq.	%	Valid %
Hiking	1	104	25.9	57.8
Skiing	2	6	1.5	3.3
Bicycling	3	4	1.0	2.2
Golfing	5	8	2.0	4.4
Boating / canoeing	6	10	2.5	5.6
Picnicking	7	2	0.5	1.1
Camping	8	2	0.5	1.1
Other	9	44	10.9	24.5
Don't know / no response	0	224	55.2	--
	Total	402	100.0	100.0

Note. Valid cases: 180, No answer: 222

Table AB2.

V6 Category of Respondent by V43 Question 20: Activity While Seeing Wildlife

	A	B	C	D	E	F	G	H	Row
Respondent	1	2	3	5	6	7	8	9	Total
Urban Albertan									
Frequency	58	4	2	6	8		2	18	95
Percentage	59.2	4.1	2.0	6.1	8.2		2.0	18.4	54.4
Rural Albertan									
Frequency	10		2	2	2			6	22
Percentage	45.5		9.1	9.1	9.1			27.3	12.2
Non Albertan									
Frequency	22	2						14	38
Percentage	57.9	5.3						36.8	21.0
School student									
Frequency	8					2		2	12
Percentage	66.7					16.7		16.7	6.7
Park employee									
Frequency	6							4	10
Percentage	60.0							40.0	5.7
Total frequency	104	6	4	8	10	2	2	44	180
Total percentage	57.8	3.3	2.2	4.4	5.7	1.1	1.1	24.4	100.0

Note. A: hiking, B: skiing, C: bicycling, D: golfing, E: boating/canoeing, F: picnicking, G: camping, H: other

APPENDIX AC

Table AC1.

V45 Question 21: How Would You Spend the Day With a Wildlife Expert?

Value label	Value	Freq.	%	Valid %
A: explanation general - interacting	1	14	3.5	8.3
B: explanation general - being shown	2	26	6.5	15.5
C: exploration walking	3	38	9.5	22.6
D: exploration canoeing / boating	4	8	2.0	4.8
E: exploration unusual	6	4	1.0	2.4
F: exploration unknown	7	6	1.5	3.6
G: handling	8	18	4.5	10.7
H: identification	9	28	7.0	16.7
I: observation, habits or behavior	10	4	1.0	2.4
J: observation, natural setting	11	8	2.0	4.8
K: learning, general	98	14	3.5	8.2
Don't know / no response	99	234	58.0	--
	Total	402	100.0	100.0

Note. Valid cases: 168, No answer: 234

Table AC2.

V6 Category of Respondent by V45 Question 21: How Would You Spend the Day With a Wildlife Expert?

	A	B	C	D	E	F	G	H	I	J	K	Row
Respondent	1	2	3	4	6	7	8	9	10	11	98	Total
Urban Albertan												
Frequency	4	12	14	6	2	4	8	12	2		10	74
Percentage	5.4	16.2	18.9	8.1	2.7	5.4	10.8	16.2	2.7		13.5	44.0
Rural Albertan												
Frequency	2	2	8	2				4		2	2	22
Percentage	9.1	9.1	36.4	9.1				18.2		9.1	9.1	13.1
Non Albertan												
Frequency	6	8	12		2		6	10	2	6	2	54
Percentage	11.1	14.8	22.2		3.7		11.1	18.5	3.7	11.1	3.7	32.1

(table continues)

AC2. (continued)

	A	B	C	D	E	F	G	H	I	J	K	Row
Respondent	1	2	3	4	6	7	8	9	10	11	98	Total
School student												
Frequency	2	2	4				2					10
Percentage	20.0	20.0	40.0				20.0					6.0
Park employee												
Frequency		2				2	2	2				8
Percentage		25.0				25.0	25.0	25.0				4.8
Total frequency	14	26	38	8	4	4	18	28	4	8	14	167
Total percentage	8.3	15.5	22.6	4.8	2.4	3.6	10.7	16.7	2.4	4.8	8.3	100.0

Tables AC1, AC2 note.

A: Explanation general – explaining things (non-specific) interacting / talking / listening to expert.

B: Explanation general – being shown around animals / going on a guided tour / getting to know the park.

C: Explanation walking – being shown animals / wildlife while walking / hiking / exploring trails / going on a guided walk

D. Exploration canoeing / boating - being shown animals / wildlife while canoeing or boating

E. Exploration unusual - looking for the unusual/exotic/new species of wildlife

F. Exploration unknown - exploring the unknown or forbidden / exploring the wild aspects of the park

G. Handling - wanting to observe how animals act when corralled / controlled / handled or wanting to help handle animals (go on a roundup, see herding)

H. Identification - identification of wildlife / being involved in an animal survey

I. Observation, habits or behavior - observing wildlife, their habits or behavior, looking for tracks or their signs / wanting to know where/when to see specific species

J. Observation, natural setting - observing wildlife in a natural setting/environment or interested in park ecosystem / being shown different sites within the park

K. Learning general - wanting to learn / gain knowledge about wildlife or history of park

98. Expert fatigue - saying they don't need a wildlife expert / preferring to be alone

99. Don't know / no response

APPENDIX AD

Table AD1.

V48 Question 22: Is There Anything Else Concerning Your Interest in Wildlife?

Value label	Value	Freq.	%	Valid %
A	1	4	1.0	3.3
B	2	16	4.0	13.3
C	3	4	1.0	3.3
D	4	10	2.5	8.3
E	5	14	3.5	11.7
F	6	18	4.5	15.0
G	7	6	1.5	5.0
H	8	20	5.0	16.7
I	9	10	2.5	8.3
J	88	18	4.5	15.0
Don't know / no response	99	282	70.2	--
	Total	402	100.0	100.0

Note. Valid cases: 120, No answer: 282

Table AD2.

V6 Category of Respondent by V48 Question 22: Is There Anything Else Concerning Your Interest in Wildlife?

	A	B	C	D	E	F	G	H	I	J	Row
Respondent	1	2	3	4	5	6	7	8	9	88	Total
Urban Albertan											
Frequency		4		2	4	6	2	10	2	8	38
Percentage		10.5		5.3	10.5	15.8	5.3	26.3	5.3	21.1	31.7
Rural Albertan											
Frequency	2	2		2	4	4			4		18
Percentage	11.1	11.1		11.1	22.2	22.2			22.2		15.0
Non Albertan											
Frequency						8	2	4		8	22
Percentage						36.4	9.1	18.2		36.4	18.3

(table continues)

Table AD2. (continued)

	A	B	C	D	E	F	G	H	I	J	Row
Respondent	1	2	3	4	5	6	7	8	9	88	Total
School student											
Frequency	2	2	4	4	2		2	4		2	22
Percentage	9.1	9.1	18.2	18.2	9.1		9.1	18.2		9.1	18.3
Park employee											
Frequency		8		2	4			2	4		20
Percentage		40.0		10.0	20.0			10.0	20.0		16.7
Total frequency	4	16	4	10	14	18	6	20	10	18	120
Total percentage	3.3	13.3	3.3	8.3	11.7	15.0	5.1	16.7	8.3	15.0	100.0

Tables AD1, AD2 note.

A: Information general -- provide pamphlets, brochures, videos, exhibits

B: Information wildlife -- provide information / pictures of wildlife, habits, behavior, viewing times and places, check lists

C: Advertising / promotion--advertise or promote the park / saw the park advertised somewhere / sell souvenirs

D: Park / interpretive centre programming – add / delete / change programming offered by the park or interpretive centre (story telling, wildlife danger, theatre programs) / exhibits/ park radio / fee concerns

E: Park / interpretive centre infrastructure – add / delete / change fixtures or amenities in the park or interpretive centre / add roads or trails / clean / repair / fix lakes, trails or roads / add recreational facilities / extend boardwalk / add picnic areas / keep parkway open

F: Park / wildlife preservation -- concern about park ecosystem / concern regarding people, motorized vehicles, boats, golf course, recreation area

G: Park orientation -- better maps / better signage / too much signage / more information on where to find everything

H: Human resource management -- increase staff and/or hours / provide interpreter or tour guide / provide transportation / keep facilities open longer / have staff speak German

I: Animal management-- cull certain species / restock lake / provide holding pens / provide information on animal management or dangers of wildlife

J: Other-- information not elsewhere classified

APPENDIX AE

Table AE1.

V51 Question 23: Is There Anything Else You Could Suggest We Do To Enhance Your Wildlife Experience?

Value label	Value	Freq.	%	Valid %
A: information general	1	12	3.0	6.4
B: information wildlife	2	16	4.0	8.5
C: advertising / promotion	3	14	3.5	7.4
D: park / interpretitve centre programming	4	20	5.0	10.6
E: park / interpretitve centre infrastructure	5	26	6.5	13.7
F: park / wildlife preservation	6	32	8.0	17.0
G: park orientation	7	12	3.0	6.4
H: human resource management	8	34	8.5	18.3
I: animal management	9	2	0.5	1.1
J: other information not elsewhere classified	88	20	5.0	10.6
Don't know / no response	99	214	53.0	--
	Total	402	100.0	100.0

Note. Valid cases: 188, No answer: 214

Table AE2.

V6 Category of Respondent by V51 Question 23: Is There Anything Else You Could Suggest We Do To Enhance Your Wildlife Experience?

	A	B	C	D	E	F	G	H	I	J	Row
Respondent	1	2	3	4	5	6	7	8	9	88	Total
Urban Albertan											
Frequency	2	6	4	4	12	14	6	18	2	8	76
Percentage	2.6	7.9	5.3	5.3	15.8	18.4	7.9	23.7	2.6	10.5	40.4
Rural Albertan											
Frequency		2	6		4	8		2		4	26
Percentage		7.7	23.1		15.4	30.8		7.7		15.4	13.7
Non Albertan											
Frequency	6	2	4	6	6	6	6	12		4	52
Percentage	11.5	3.8	7.7	11.5	11.5	11.5	11.5	23.1		7.7	27.7

(table continues)

Table AE2. (continued)

	A	B	C	D	E	F	G	H	I	J	Row
Respondent	1	2	3	4	5	6	7	8	9	88	Total
School student											
Frequency	2	2		6		4				2	16
Percentage	12.5	12.5		37.5		25.0				12.5	8.5
Park employee											
Frequency	2	4		4	4			2		2	18
Percentage	11.1	22.2		22.2	22.2			11.1		11.1	9.7
Total frequency	12	16	14	20	26	32	12	34	2	20	188
Total percentage	6.4	8.5	7.4	10.6	13.8	17.0	6.4	18.1	1.1	10.7	100.0

Tables AE1, AE2 note.

A: Information general -- provide pamphlets, brochures, videos, exhibits

B: Information wildlife -- provide information / pictures of wildlife, habits, behavior, viewing times and places, check lists

C: Advertising / promotion--advertise or promote the park / saw the park advertised somewhere / sell souvenirs

D: Park / interpretive centre programming – add / delete / change programming offered by the park or interpretive centre (story telling, wildlife danger, theatre programs) / exhibits/ park radio / fee concerns

E: Park/interpretive centre infrastructure – add / delete / change fixtures or amenities in the park or interpretive centre / add roads or trails / clean / repair / fix trails or roads / add recreational facilities / extend boardwalk / add picnic areas / keep parkway open

F: Park / wildlife preservation -- concern about park ecosystem / concern regarding people, motorized vehicles, boats, golf course, recreation area

G: Park orientation -- better maps / better signage / too much signage / more information on where to find everything

H: Human resource management -- increase staff and/or hours / provide interpreter or tour guide / provide transportation / keep facilities open longer / have staff speak German

I: Animal management -- cull certain species / restock lake / provide holding pens/ provide information on animal management or dangers of wildlife

J: Other -- information not elsewhere classified

APPENDIX AF

Question 24: Please Identify the Following Photos of Wildlife

Table AF1.

V54 Moose Identification by Photo

Value Label	Value	Freq.	%	Valid %
Yes	1	218	54	90.1
No	2	24	6	9.9
Don't know / no response	9	160	40	--
	Total	402	100.0	100.0

Note. Valid cases: 242, No answer: 160

Table AF2.

V6 Category of Respondent by V54 Moose Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	111	4	115
Percentage	96.5	3.5	47.5
Rural Albertan			
Frequency	30		30
Percentage	100		12.5
Non Albertan			
Frequency	51	12	63
Percentage	81.0	19.0	26.1
School student			
Frequency	14	6	20
Percentage	70.0	30.0	8.3
Park employee			
Frequency	12	2	14
Percentage	85.7	14.3	5.3
Total frequency	218	24	242
Total percentage	90.1	9.9	100.0

Note. A: yes, B: no

Table AF3.

V55 White-tailed Deer Identification by Photo

Value label	Value	Freq.	%	Valid %
Yes	1	202	50.2	83.5
No	2	40	10.0	16.5
Don't know / no response	9	160	39.8	--
	Total	402	100.0	100.0

Note. Valid cases: 242, No answer: 160

Table AF4.

V6 Category of Respondent by V55 White-tailed Deer Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	100	16	116
Percentage	86.2	13.8	47.9
Rural Albertan			
Frequency	30		30
Percentage	100.0		12.4
Non Albertan			
Frequency	46	16	62
Percentage	74.2	25.8	25.6
School student			
Frequency	12	8	20
Percentage	60.0	40.0	8.3
Park employee			
Frequency	14		14
Percentage	100.0		5.8
Total frequency	202	40	242
Total percentage	83.5	16.5	100.0

Note. A: yes, B: no

Table AF5.

V56 Coyote Identification by Photo

Value Label	Value	Freq.	%	Valid %
Yes	1	192	47.8	79.3
No	2	50	12.4	20.7
Don't know / no response	9	160	39.8	--
	Total	402	100.0	100.0

Note. Valid cases: 242. No answer: 160

Table AF6.

V6 Category of Respondent by V56 Coyote Identification

Respondent	A	B	Row Total
Urban Albertan			
Frequency	96	20	116
Percentage	82.8	17.2	47.9
Rural Albertan			
Frequency	30		30
Percentage	100.0		12.9
Non Albertan			
Frequency	36	26	62
Percentage	58.1	41.9	25.9
School student			
Frequency	16	4	20
Percentage	80.0	20.0	8.2
Park employee			
Frequency	14		14
Percentage	100.0		5.1
Total frequency	192	50	242
Total percentage	79.3	20.7	100.0

Note. A: yes, B: no

Table AF7.

V57 Northern Oriole Identification by Photo

Value label	Value	Freq.	%	Valid %
Yes	1	78	19.4	32.2
No	2	164	40.8	67.8
Don’t know / no response	9	160	39.8	--
	Total	402	100.0	100.0

Note. Valid cases: 242, No answer: 160

Table AF8.

V6 Category of Respondent by V57 Northern Oriole Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	40	76	116
Percentage	34.5	65.5	47.9
Rural Albertan			
Frequency	14	16	30
Percentage	46.7	53.3	12.4
Non Albertan			
Frequency	18	44	62
Percentage	29.0	71.0	25.6
School student			
Frequency	6	14	20
Percentage	30.0	70.0	8.3
Park employee			
Frequency		14	14
Percentage		100.0	5.8
Total frequency	78	164	242
Total percentage	32.2	67.8	100.0

Note. A: yes, B: no

Table AF9.

V58 Red-necked Grebe Identification by Photo

Value label	Value	Freq.	%	Valid %
Yes	1	82	20.4	33.9
No	2	160	39.8	66.1
Don't know / no response	9	160	39.8	--
	Total	402	100.0	100.0

Note. Valid cases: 242, No answer: 160

Table AF10.

V6 Category of Respondent by V58 Red-necked Grebe Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	42	74	116
Percentage	36.2	63.8	47.9
Rural Albertan			
Frequency	14	16	30
Percentage	46.7	53.3	12.4
Non Albertan			
Frequency	22	40	62
Percentage	35.5	64.5	25.6
School student			
Frequency	4	16	20
Percentage	20.0	80.0	8.3
Park employee			
Frequency		14	14
Percentage		100.0	5.8
Total frequency	82	160	242
Total percentage	33.9	66.1	100.0

Note. A: yes, B: no

Table AF11.

V59 Black-capped Chickadee Identification by Photo

Value label	Value	Freq.	%	Valid %
Yes	1	84	20.9	34.7
No	2	158	39.3	65.3
Don't know / no response	9	160	39.8	--
	Total	402	100.0	100.0

Note. Valid cases: 242, No answer: 160

Table AF12.

V6 Category of Respondent by V59 Black-capped Chickadee Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	48	68	116
Percentage	41.4	58.6	47.9
Rural Albertan			
Frequency	14	16	30
Percentage	46.7	53.3	12.4
Non Albertan			
Frequency	18	44	62
Percentage	29.0	71.0	25.6
School student			
Frequency	4	16	20
Percentage	20.0	80.0	8.3
Park employee			
Frequency		14	14
Percentage		100.0	5.8
Total frequency	84	158	242
Total percentage	34.7	65.3	100.0

Note. A: yes, B: no

Table AF13.

V60 Prickly Rose Identification by Photo

Value Label	Value	Freq.	%	Valid %
Yes	1	88	21.9	36.4
No	2	154	38.3	63.6
Don't know / no response	9	160	39.8	--
	Total	402	100.0	100.0

Note. Valid cases: 122, No answer: 280

Table AF14.

V6 Category of Respondent by V60 Prickly Rose Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	48	68	116
Percentage	41.4	58.6	47.9
Rural Albertan			
Frequency	14	16	30
Percentage	46.7	53.3	12.4
Non Albertan			
Frequency	20	42	62
Percentage	32.3	67.7	25.6
School student			
Frequency	6	14	20
Percentage	30.0	70.0	8.3
Park employee			
Frequency		14	14
Percentage		100.0	5.8
Total frequency	88	154	242
Total percentage	36.4	63.6	100.0

Note. A: yes, B: no

Table AF15.

V61 Butterfly (Tiger Swallowtail) Identification by Photo

Value label	Value	Freq.	%	Valid %
Yes	1	76	18.3	31.4
No	2	166	41.3	68.6
Don't know / no response	9	160	40.4	--
	Total	402	100.0	100.0

Note. Valid cases: 242, No answer: 160

Table AF16.

V6 Category of Respondent by V61 Butterfly (Tiger Swallowtail) Identification

Respondent	A 1	B 2	Row Total
Urban Albertan			
Frequency	38	78	116
Percentage	32.8	67.2	47.9
Rural Albertan			
Frequency	14	16	30
Percentage	46.7	53.3	12.4
Non Albertan			
Frequency	20	42	62
Percentage	32.3	67.7	25.6
School student			
Frequency	4	16	20
Percentage	20.0	80.0	8.3
Park employee			
Frequency		14	14
Percentage		100.0	5.8
Total frequency	76	166	242
Total percentage	31.4	68.6	100.0

Note. A: yes, B: no

APPENDIX AG

WILDLIFE VIEWERS INTERVIEWS

ELK ISLAND NATIONAL PARK

CODEBOOK

1995/96

NOTATIONS

A. DK: don't know

NA: not applicable

NR: no response

B. V11 (Occupation) was coded using the two digit codes from Statistics Canada 1991 Standard Occupational Classification Manual (Catalogue Number 12-565)

VAR	COL	VARNAME	
V1	1-3	REC	Respondent number
V2	4-5	MONTH	Month of interview actual month coded DK / NR 99
V3	6-7	DAY	Calendar day of interview actual day coded DK / NR 99
V4	8	TIME	Time of interview

Morning (12:00 a.m. - 11:59 a.m.)	1
Afternoon (12:00 p.m. - 5:59 p.m.)	2
Evening (6:00 p.m. - 11:59 p.m.)	3
DK / NR9	4

VAR	COL	VARNAME		
V5	9	LOC	Location where the survey took place within EINP	
			Astotin Recreation Area main parking lot/ beach area	1
			Sandy Beach Campground	2
			Interpretive Centre	3
			Information Centre	4
			Elk Island Parkway	5
			North Gate and/or South Gate	6
			Golf Course	7
			Other	8
			DK / NR	9
V6	10	CAT	Category of respondent	
			Alberta Urban	1
			Albertan Rural	2
			Non Albertan	3
			School Student	4
			Park Employee	5
			DK / NR	9

VAR	COL	VARNAME		
V7	11-12	AGE	Age of respondent	
			Under 16	1
			16 - 19	2
			20 – 24	3
			25 – 29	4
			30 – 34	5
			35 – 39	6
			40 – 44	7
			45 – 49	8
			50 – 54	9
			55 – 59	10
			60 – 69	11
			70 – 74	12
			75 and over	13
			DK / NR	14
V8	13	SEX	Sex of respondent	
			Male	1
			Female	2
			DK / NR	3
V9	14	USAGE	Respondents' use of EINP	
			Day user	1
			Overnight user	2
			DK / NR	3

VAR	COL	VARNAME	
V10	15	ORIGIN	Principal residence of respondent

Edmonton	1
Fort Saskatchewan	2
Other Alberta	3
Other Canada	4
US	5
Europe	6
Other Foreign	7
DK / NR	8

V11	16-17	OCCUP	Principal occupation of respondent

Management occupations	1
Business, finance and administrative occupations	2
Natural and applied sciences, and related occupations	3
Health occupations	4
Social sciences, education, government services and religion	5
Art, culture, recreation and sports	6
Sales and service	7
Trades, transport and equipment operators and related occupations	8
Occupations unique to primary industry	9
Occupations unique to processing, manufacturing and utilities	10
Not working (retired, keeping house, student)	11
DK / NR	99

WE ARE TRYING TO UNDERSTAND THE IMPORTANCE OF WILDLIFE ENCOUNTERS IN THE PARK AND I WOULD LIKE TO ASK YOU A FEW SHORT QUESTIONS BASED ON SOME OF YOUR EXPERIENCES WITH WILDLIFE. WE DEFINE WILDLIFE AS ALL LIVING NATIVE ANIMALS, BIRDS AND PLANTS IN THE PARK.

VAR	COL	VARNAME
V12	18	TSPENT

1. How long did you spend in the park?

Less than one hour	1
1 - 3 hours	2
3 - 5 hours	3
More than 5 hours but not overnight	4
Overnight	5
DK / NR	9

2. What is your main reason for coming to EINP?

on the way to destination / lost / by accident	1
to see large animals like elk & bison	2
to bird watch	3
to enjoy scenery and relax	4
to picnic	5
to camp	6
to golf	7
to attend park interpretive programs or facilities to learn about nature	9
to walk a trail / hike	10

Other	98
DK / NR	99

VAR	COL	VARNAME			
V13	19-20	REASON1		FIRST reason mentioned	
V14	21-22	REASON2		SECOND reason mentioned	
V15	23-24	REASON3		THIRD reason mentioned	
V16	25	EXIST	3.	In your opinion what is the most important reason for the existence of Elk Island National Park?	
			Ecological		1
			Recreational		2
			Both ecological and recreational		3
			Other		8
			DK / NR		9
V17	26	WLREASON	4.	Is to view wildlife the major reason you came to Elk Island National Park?	
			Yes		1
			No		2
			DK / NR		9
			5.	What is the most memorable wildlife encounter you have had in the park?	

VAR	COL	VARNAME		
V18	27-28	WLENEX1		FIRST response given see APPENDIX A for codes
V19	29-30	WLENEX2		SECOND response given see APPENDIX A for codes
V20	31-32	WLENEX3		THIRD response given see APPENDIX A for codes
			6.	Why was this encounter with wildlife so important?
V21	33-34	WLIMP1		FIRST response given see APPENDIX A for codes
V22	35-36	WLIMP2		SECOND response given see APPENDIX A for codes
V23	37-38	WLIMP3		THIRD response given see APPENDIX A for codes
			7.	How do you define a most memorable wildlife encounter?
V24	39-40	WLENDEF1		FIRST response given see APPENDIX A for codes
V25	41-42	WLENDEF2		SECOND response given see APPENDIX A for codes
V26	43-44	WLENDEF3		THIRD response given see APPENDIX A for codes

8. What is your favorite wildlife species in the park?

Bison	1
Elk	2
Moose	3
Beaver	4
Other animal (non-bird)	5
Other animal unspecified (non-bird)	6
Plant	7
Bird	8
Bird unspecified	9
No preference	98
DK / NR	99

VAR	COL	VARNAME		
V27	45-56	WLFAV1		FIRST species mentioned
V28	47-48	WLFAV2		SECOND species mentioned
V29	49-50	WLFAV3		THIRD species mentioned
V30	51	SPTRIPS	9.	Have you made special trips to the park to see wildlife?

Yes	1
No	2
DK / NR	9

VAR	COL	VARNAME			
V31	52	WLMTIMP	10.	How important was it for you to meet wildlife while in Elk Island National Park?	
				Very unimportant	1
				Unimportant	2
				Neither important nor unimportant	3
				Important	4
				Very important	5
				DK / NR	9
V32	53	WASALONE	11.	Was anyone with you during your wildlife encounter?	
				Yes	1
				No	2
				DK / NR	9
V33	54	SHAREIMP	12.	How important is it that you share this wildlife encounter with someone?	
				Yes	1
				No	2
				DK / NR	9

13. Was it something the wildlife was doing that made it your most memorable encounter?

VAR	COL	VARNAME			
V34	55-56	WACTION1		FIRST response given	
				see APPENDIX B for codes	
V35	57-58	WACTION2		SECOND response given	
				see APPENDIX B for codes	
V36	59-60	WACTION3		THIRD response given	
				see APPENDIX B for codes	
V37	61	WLENLOC	14.	Where did this excellent wildlife encounter happen?	
				Bison paddock	1
				Elk Island Parkway	2
				Recreation area	3
				Other	4
				DK / NR	9
V38	62	WLENCAR	15.	Did this wildlife encounter happen while you were in the car?	
				Yes	1
				No	2
				DK / NR	9
V39	63	VISITPYR	16.	How many times a year do you come to Elk Island to view wildlife?	
				Once	1
				Twice	2
				Three times	3
				More than three times	4
				DK / NR	9

VAR	COL	VARNAME			
V40	64	WLSNDFAV	17.	Do you have a favorite wildlife sound or voice here in the park?	
				Yes	1
				No	2
				DK / NR	9
V41	65	WLSNDPRF	18.	Of different wildlife sounds, what would you most like to hear?	
				Common loon	1
				Red-necked grebe	2
				Manitoba elk	3
				Coyote	4
				Other (Red tree squirrel, Blue jay, Red-tailed hawk, beaver, Canada goose, White-tailed deer, moose, White-throated sparrow, duck, buffalo/bison, Richardson ground squirrel, bittern)	8
				DK / NR	9

VAR	COL	VARNAME
V42	66	SEASON

19. Do you have a favorite season for wildlife viewing in the park?

Spring	1
Summer	2
Fall	3
Winter	4
No preference/more than one season mentioned	8
DK / NR	9

20. Have you had any meaningful wildlife encounters in the park while participating in other activities?

Hiking	1
Skiing	2
Bicycling	3
Photographing	4
Golfing	5
Boating/canoeing	6
Picnicking	7
Canoeing	8
Other (bird watching, in a vehicle, snowshoeing)	9
DK / NR	0

VAR	COL	VARNAME	
V43	67	ANOTHER1	FIRST activity mentioned
V44	68	ANOTHER2	SECOND activity mentioned
			21. If you won the prize of spending the day with a wildlife expert of your choice, how would (you) want to spend the day in Elk Island? Doing what?
V45	69-70	SAFARI1	FIRST response given see APPENDIX C for codes
V46	71-72	SAFARI2	SECOND response given see APPENDIX C for codes
V47	73-74	SAFARI3	THIRD response given see APPENDIX C for codes
			22. Is there anything else concerning your interest in wildlife?
V48	75-76	MISC1	FIRST response given see APPENDIX D for codes
V49	77-78	MISC2	SECOND response given see APPENDIX D for codes
V50	79-80	MISC3	THIRD response given see APPENDIX D for codes

VAR	COL	VARNAME			
			23.	Is there anything else you could suggest we could do to enhance your wildlife experience?	
V51	81-82	MISC1		FIRST response given	
				see APPENDIX D for codes	
V52	83-84	MISC2		SECOND response given	
				see APPENDIX D for codes	
V53	85-86	MISC3		THIRD response given	
				see APPENDIX D for codes	
			24.	Please identify the following from photos (knowledge test).	
V54	87	TEST1		a. Female moose	
				Yes	1
				No	2
				DK / NR	9
V55	88	TEST2		b. White-tailed deer	
				Yes	1
				No	2
				DK / NR	9
V56	89	TEST3		c. Coyote	
				Yes	1
				No	2
				DK / NR	9

VAR	COL	VARNAME		
V57	90	TEST4	d. Northern oriole	
			Yes	1
			No	2
			DK / NR	9
V58	91	TEST5	e. Red-necked grebe	
			Yes	1
			No	2
			DK / NR	9
V59	92	TEST6	f. Black-capped chickadee	
			Yes	1
			No	2
			DK / NR	9
V60	93	TEST7	g. Prickly rose	
			Yes	1
			No	2
			DK / NR	9
V61	94	TEST8	h. Butterfly (Tiger swallowtail)	
			Yes	1
			No	2
			DK / NR	9

APPENDIX AH

Questions 5, 6 & 7 (V18 through V26)

5. What is the most excellent wildlife encounter you have had in the park?

6. Why was this encounter with wildlife so important?

7. How do you define an excellent wildlife encounter?

Specific Non-Bird Species Mentioned:

11. Bison

12. Manitoba elk

13. Moose

14. White-tailed deer

15. Coyote

16. Beaver

17. Other (bear, dragonfly, frog, ground squirrel, leech, lynx, muskrat, porcupine, tree squirrel, tadpole, toad)

Specific Bird Species Mentioned:

21. American white pelicans

22. Common loons

23. Red-necked grebes

24. Woodpeckers

25. Swans

26. Red-tailed hawks

27. Other (Bald eagle, Barrows goldeneye, Bittern, Black crowned heron,

Double crested cormorant, duck, geese, Great blue heron, Great grey owl, Morning warbler, Red winged blackbird, Veery)

29. all species/non-specific interest in wildlife

Wildlife Viewing Attributes

31. Aggressive behavior of wildlife / animals fighting / threat of personal danger / seeing someone injured
32. Size and/or shape of wildlife important
33. Wildlife exerting control over people / wildlife in command
34. Unspecified animal movement / fast movement
41. Availability of a particular species enhances experience
42. Being close to wildlife / sense of intimacy with wildlife
43. Rarity of wildlife
44. Unspecified response
45. Quantity / number of wildlife important
51. Presence of others enhances wildlife experience
52. Presence of children enhances wildlife experience
53. Experience of stillness / quiet / isolation / solitude
54. Unspecified response
61. Element of surprise / unexpected / unusual / novelty
62. Feeling that the species is endangered
63. Feeling that the species represents ties to the past or is important for historical reasons
64. Perception that the species is free or is in its natural environment
65. Mention of maternal / paternal behavior / preference for young / seeing

young being born

66. Feeling that it is important that the animal is cared for

Missing Information:

99. DK/NA

APPENDIX AI

Question 13 (V34 V35 V36)

Was it something the wildlife was doing that made it your favorite encounter?

Movements / Behavior / Feelings Relating To Aggression Or Fear:

11. Animal was fighting

12. Predator / prey relationship / animals eating/feeding on other animals

13. Feeling of threat / personal danger

14. Aggressive behavior of wildlife

15. Wildlife exerting control over people / wildlife in command

Other Animal Movements / Behavior:

21. Running

22. Swimming / in the water

23. Eating

24. Sleeping

25. Gathering in herds / interacting with other species members

26. Coming down / climbing a tree

27. Animal young being born

27. Non-specific mention of animal presence, behavior or movement

Dimensions Relating to the Natural Environment:

31. Animal is in a natural state / habitat / being free or in the wild

32. Animal is peaceful / tranquil

33. Feeling of invasion when in the presence of wildlife / being in their territory

34. Animal was caring for its young / being maternal/paternal

35. Sounds of animal / nature important

Other Dimensions:

41. Being close to wildlife important

42. Size/shape/general appearance of wildlife important

43. Seeing wildlife from a distance

44. Element of surprise / unexpected / unusual / novelty

45. Species is rare or is important for historical reasons / represents ties to past

Specific Species Mentioned:

51. Bison

52. Manitoba elk

53. Moose

54. Beaver

55. Other (Double-crested cormorant, coyote, Richardson ground squirrel, leech, porcupine, Red tree squirrel)

Missing Information:

99. DK/NA

APPENDIX AJ

Question 21 (V45 V46 V47)

If you won the prize of spending the day with a wildlife expert of your choice, how would (you) want to spend the day in Elk Island? Doing what?

01	Explanation general -	explaining things (non-specific) interacting / talking / listening to expert.
02	Explanation general -	being shown around / going on a guided tour / getting to know the park
03	Exploration walking -	being shown animals / wildlife while walking / hiking / exploring trails going on a guided walk
04	Exploration canoeing / boating	being shown animals / wildlife while canoeing or boating
05	Exploration unusual -	looking for the unusual/exotic/new species of wildlife
06	Exploration unknown -	exploring the unknown or forbidden / exploring the wild aspects of the park
07	Handling -	wanting to observe how animals act when corralled / controlled / handled or wanting to help handle animals (go on a roundup, see herding)
08	Identification -	identification of wildlife / being involved in an animal survey

09	Observation, habits or behavior	observing wildlife, their habits or behavior, looking for tracks or their signs / wanting to know where/when to see specific species
10	Observation, natural setting	observing wildlife in a natural setting/environment or interested in park ecosystem / being shown different sites within the park
11	Learning general -	wanting to learn / gain knowledge about wildlife or history of park
98	Expert fatigue -	saying they don't need a wildlife expert / preferring to be alone
99	DK / NA	

APPENDIX AK

Questions 22 and 23 (V48 through V53)

22. Is there anything else concerning your interest in wildlife?
23. Is there anything else you could suggest we do to enhance your wildlife experience?

01	Information general	provide pamphlets, brochures, videos, exhibits
02	Information Wildlife	provide information/pictures of wildlife, habits, behavior, viewing times and places, checklists
03	Advertising / promotion	advertise or promote the park / saw the park advertised somewhere / sell souvenirs
04	Park / interpretive centre programming	add / delete / change programming offered by the park or interpretive centre (story telling, wildlife danger, theatre programs) exhibits / park radio / fee
05	Park infrastructure	add/remove/change fixtures or amenities in the park or interpretive centre / add roads or trails / clean/ repair/fix lakes, trails or roads / add recreational facilities / extend boardwalk / add picnic areas / keep parkway open

06	Park / wildlife preservation	concern about park ecosystem / concern regarding people, motorized vehicles, boats, golf course, recreation area
07	Park orientation	better maps / better signage / too much signage / more information on where to find everything
08	Human Resource Management	increase staff and/or hours / provide interpreter or tour guide / provide transportation / keep facilities open longer / have staff speak German
09	Animal Management	cull certain species / restock lake / provide holding pens / provide information on animal management or dangers of wildlife
88	Other	information not elsewhere classified
99	DK / NA	